THREE HAWTHORN PARKWAY
VERNON HILLS, ILLINOIS 60061
PHONE: 708-918-4000

31 October 1990

Mr. Henry Lopes
Techalloy Company, Inc.
370 Franklin Turnpike
Mahwah, NJ 07430

Work Order No.: 1989-06-03

Subject: Proposal to Determine the Extent of Contaminated Groundwater at the Techalloy facility in Union, Illinois

Dear Mr. Lopes:

Introduction

The recent groundwater sampling conducted at the Techalloy facility in Union, Illinois, by Roy F. Weston, Inc. (WESTON) indicates that the sample collected from the off-site monitoring well located at the intersection of North Union Road (McHenry County Road T65) and Highbridge Road contained elevated concentrations of trichloroethene (TCE), perchloroethene (PCE), and 1,1,1-trichloroethane (TCA).

This finding confirms that a plume of contaminated groundwater has migrated off the Techalloy property in a northwesterly direction at least as far as the Highbridge Road monitoring well, a distance of approximately 2,000 feet.

Technical Proposal

Based on our discussions with you, WESTON proposes to conduct an extent of groundwater contamination study to assess the lateral and downgradient extent of the contaminant plume originating at the Techalloy facility. For this purpose WESTON proposes to subcontract Tracer Research Corporation (TRC) field crew and analytical field van equipped with groundwater sampling probes and a gas chromatograph (GC) for on-site sample analysis. All work would be directly supervised by WESTON. The TRC sampling methodology represents a rapid, cost effective means of obtaining groundwater data from a number of sample locations. The alternative to the proposed strategy is the more time-consuming, conventional process involving a series of hit or miss monitoring well installations followed by sample collection and analysis of samples in a fixed laboratory.

The on-site laboratory and sampling apparatus would be capable of collecting and analyzing groundwater samples from approximately 10-12 separate locations per day. The shallow water table in the vicinity of the Techalloy site would allow each sample to be collected and analyzed quickly. WESTON estimates that approximately 30 to 35 groundwater samples would be necessary to define the full lateral and downgradient extent of the contaminant plume. This sampling could be completed in a 3-day period.

The basic sample procedure consists of driving a 3/4-inch hollow steel pipe to the water table using a specialized hydraulic mechanism. The sample is collected by applying a vacuum to a 1/4-inch polyethylene tube inserted down the probe to the bottom of the open hole. The narrow tubing minimizes exposure of the sample to air and thus minimizes evaporation of any volatile organic compounds (VOCs) present in the sample. The sample is collected into 40-ml VOC vials, then analyzed by injecting the vapors from the vials into the GC. Appropriate decontamination and quality control procedures are adhered to during the sampling and analysis to insure valid analytical results.

A sample will be collected at each of the 25 locations shown in Figure 1. An additional 5 to 10 samples will be collected at various locations. The location of these additional samples will be based on the results obtained at the initial sample locations. Most of the proposed sample locations are in off-site areas. WESTON and Techalloy will be responsible for requesting and obtaining permission from owners of the relevant properties prior to mobilization of the TRC field unit. If a particular property owner is unwilling to allow access to his/her property for sampling, an alternative location will be selected.

The mobile laboratory is also capable of analyzing soil samples. WESTON proposes to collect and analyze approximately 15 shallow soil samples from the area surrounding the Techalloy plant to identify areas of potentially contaminated soils that are acting as sources of groundwater contamination. Infiltration of precipitation through these areas of soil contamination further contribute to the present groundwater problems. Investigation and remediation of these source areas will help eliminate recharge of contaminated groundwater. Soil samples would be collected using a hand bucket auger. The soil sampling and analysis effort will

Well MW3

Well Construction Summary

Location or Coords: North of building #2

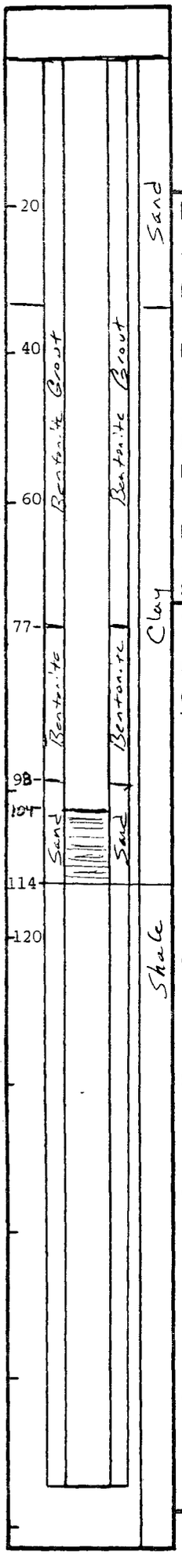
Elevation: Ground Level

Top of Casing

Location Union, IL

Personnel Paul Bartz

Project Tech Alloy



Drilling Summary:

Total Depth 115.5'

Borehole Diameter 6.25"

Driller Layne Western

Rig Gus Pech

Bit(s) 4.25" ID HSA

Drilling Fluid NA

Surface Casing 8" protective casing

Well Design:

Basis: Geologic Log ____ Geophysical Log ____

Casing String(s): C = Casing S = Screen (feet)

+ 2	-	104	C		-		
104	-	114	S		-		
	-				-		
	-				-		
	-				-		
	-				-		
	-				-		
	-				-		

Casing: C1 2" PVC - 106'

C2

Screen: S1 2" PVC - 10' slot 0.01

S2

Centralizers NA

Filter Material Flint sand - medium

Cement Portland type II

Other Bentonite - Wyoming

Construction Time Log:

Task	Start Date	Start Time	Finish Date	Finish Time
Drilling:				
	1/12/91	1300	1/12/90	0017
Geophys. Logging:				
Casing:				
	1/13/90	0800	1/13/90	1200
Filter Placement:	1/13/90	1200	1/13/90	1300
Cementing:	1/13/90	1330	1/13/90	1430
Development:				
Other:				
Bentonite	1/13/90	1300	1/13/90	13300

Well Development:

Remove in excess of 5 volumes of water. Water at end of development was clear.

Comments:

No split-spoon sample collected. Soil cuttings were described and suggested that sand ended at 35 feet clay extended to 114 feet.

WESTON DESIGNERS CONSULTANTS

Custody Transfer Record/Lab Work Request

WESTON Analytics Use Only

9098G010

Client
Work Order
Date Rec'd. [illegible] Date Due [illegible]
RFW Contact
Client Contact/Phone

Refrigerator#	P	C	C						
#/Type Container	[illegible]	1/P	4/G						
Volume	40ml	500ml	20oz						
Preservative		X							
ANALYSES REQUESTED	0624F	SOL *	0625P						

WA Use Only Lab ID	Client ID/Description	Matrix	Date Collected									
001							(1 Vial Air bubbles)					
002			[illegible]				(2 Vial Air bubbles)					
003												
004												
005							(1 Vial Air bubbles)					
006												
007							(1 Vial Air bubbles)					
008												
009												
010												
011												
012												
013												
014												

Matrix: S - Soil; SE - Sediment; SO - Solid; W - Water; O - Oil; A - Air; WI - Wipe; DS - Drum Solids; DL - Drum Liquids; F - Fish; L - EP/TCLP Leachate; X - Other

Special Instructions:

* SOL Metals - Cd Cr Cu [illegible] Hg [illegible]

Item/Reason	Relinquished by	Received by	Date	Time	Item/Reason	Relinquished by	Received by	Date	Time
		[illegible]	[illegible]	1140					

WESTON Analytics Use Only

Samples Were:
1 Shipped or Hand-Delivered
NOTES: [illegible]

2 Ambient or Chilled
NOTES:

3 Received Broken/Leaking (Improperly Sealed)
Y N
NOTES: [illegible]

4 Properly Preserved
Y N
NOTES:

5 Received Within Holding Times
Y N
NOTES:

COC Tape Was:
1 Present on Outer Package Y N
2 Unbroken on Outer Package Y N
3 Present on Sample Y N
4 Unbroken on Sample Y N
NOTES:

COC Record Was:
1 Present Upon Receipt of Samples Y N

Discrepancies Between Sample Labels and COC Record? Y N
NOTES:

RFW 21-21-001/A-12/88

7-115

WESTON-GULF COAST LABORATORIES, INC.
2417 Bond St., University Park, Illinois 60466
Phones: (708) 534-5200 (219) 885-7077 (815) 723-7533

ANALYTICAL REPORT

To: Techalloy
Roy F. Weston, Incorporated
3 Hawthorn Parkway, Suite 400
Vernon Hills, IL 60061

Attn: Mr. Carlos Serna

Date: Friday September 21st, 1990

RE: TA-Produc. Well
Project # 1989-06-03-0000
Lab ID: 9008G010-001
Sample Date: 08/29/90
Date Received: 08/31/90
Units: UG/L

VOLATILES BY GC/MS, PRIORITY POLLUTANT LIST

Volatile Compound	Result	Detection Limit	Flag
Dibromochloromethane	BDL	5	U
1,1,2-Trichloroethane	BDL	5	U
Benzene	BDL	5	U
Trans-1,3-Dichloropropene	BDL	5	U
Bromoform	BDL	5	U
Tetrachloroethene	BDL	5	U
1,1,2,2-Tetrachloroethane	BDL	5	U
Toluene	BDL	5	U
Chlorobenzene	BDL	5	U
Ethylbenzene	BDL	5	U
Xylene (total)	BDL	5	U
Acrolein	BDL	500	U
Acrylonitrile	BDL	100	U
Dichlorodifluoromethane	BDL	20	U
Trichlorofluoromethane	BDL	10	U
Bis(chloromethyl)ether	BDL	20	U
2-Chloroethylvinylether	BDL	10	U

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Attn: **Mr. Carlos Serna**

Date: Friday September 21st, 1990

RE: **TA-Produc. Well**
Project # 1989-06-03-0000
Lab ID: **9008G010-001**
Sample Date: 08/29/90
Date Received: 08/31/90
Units: UG/L

Tentatively Identified Compounds

1 Volatile Compounds greater than 10% of the nearest internal standard were tentatively identified by mass spectral library search. This is exclusive of any target compounds, surrogates or internal standards.

Volatile Compound	Retention Time	Estimated Concentration
Unknown	2.13	40 J

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Attn: **Mr. Carlos Serna**

Date: Wednesday September 19th, 1990

RE: **TA-Field Blank**
Project # 1989-06-03-0000
Lab ID: **9008G010-002**
Sample Date: 08/30/90
Date Received: 08/31/90

Inorganic Client Data Report

Parameters	Result	Units	Reporting Limit
Arsenic, Soluble	0.0040 u	mg/L	0.0040
Cadmium, Soluble	0.0040 u	mg/L	0.0040
Chromium, Soluble	0.020 u	mg/L	0.020
Copper, Soluble	0.020 u	mg/L	0.020
Mercury, Soluble	0.00020 u	mg/L	0.00020
Lead, Soluble	0.0027	mg/L	0.0020

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Attn: Mr. Carlos Serna

Date: Friday September 21st, 1990

RE: TA-Field Blank
Project # 1989-06-03-0000
Lab ID: 9008G010-002
Sample Date: 08/30/90
Date Received: 08/31/90
Units: UG/L

VOLATILES BY GC/MS, PRIORITY POLLUTANT LIST

Volatile Compound	Result	Detection Limit	Flag
Chloromethane	BDL	10	U
Bromomethane	BDL	10	U
Vinyl Chloride	BDL	10	U
Chloroethane	BDL	10	U
Methylene Chloride	BDL	5	U
Acetone	BDL	10	U
1,1-Dichloroethene	BDL	5	U
1,1-Dichloroethane	BDL	5	U
1,2-Dichloroethene (total)	BDL	5	U
Chloroform	BDL	5	U
1,2-Dichloroethane	BDL	5	U
1,1,1-Trichloroethane	BDL	5	U
Carbon Tetrachloride	BDL	5	U
Bromodichloromethane	BDL	5	U
1,2-Dichloropropane	BDL	5	U
cis-1,3-Dichloropropene	BDL	5	U
Trichloroethene	BDL	5	U

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Project # 1989-06-03-0000
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Sample Date: 08/30/90
Date Received: 08/31/90
Units: UG/L

VOLATILES BY GC/MS, PRIORITY POLLUTANT LIST

Volatile Compound	Result	Detection Limit	Flag
Dibromochloromethane	BDL	5	U
1,1,2-Trichloroethane	BDL	5	U
Benzene	BDL	5	U
Trans-1,3-Dichloropropene	BDL	5	U
Bromoform	BDL	5	U
Tetrachloroethene	BDL	5	U
1,1,2,2-Tetrachloroethane	BDL	5	U
Toluene	BDL	5	U
Chlorobenzene	BDL	5	U
Ethylbenzene	BDL	5	U
Xylene (total)	BDL	5	U
Acrolein	BDL	500	U
Acrylonitrile	BDL	100	U
Dichlorodifluoromethane	BDL	20	U
Trichlorofluoromethane	BDL	10	U
Bis(chloromethyl)ether	BDL	20	U
2-Chloroethylvinylether	BDL	10	U

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Attn: Mr. Carlos Serna

Date: Friday September 21st, 1990

RE: TA-Field Blank
Project # 1989-06-03-0000
Lab ID: 9008G010-002
Sample Date: 08/30/90
Date Received: 08/31/90
Units: UG/L

Tentatively Identified Compounds

No Volatile Compounds greater than 10% of the nearest internal standard were tentatively identified by mass spectral library search. This is exclusive of any target compounds, surrogates or internal standards.

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To: Techalloy
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Vernon Hills, IL 60061

Attn: Mr. Carlos Serna

Date: Wednesday September 19th, 1990

RE: TA-MW01
Project # 1989-06-03-0000
Lab ID: 9008G010-003
Sample Date: 08/30/90
Date Received: 08/31/90

Inorganic Client Data Report

Parameters	Result	Units	Reporting Limit
Arsenic, Soluble	0.0040 u	mg/L	0.0040
Cadmium, Soluble	0.0040 u	mg/L	0.0040
Chromium, Soluble	0.020 u	mg/L	0.020
Copper, Soluble	0.020 u	mg/L	0.020
Mercury, Soluble	0.00020 u	mg/L	0.00020
Lead, Soluble	0.0020	mg/L	0.0020

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To: Techalloy
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3 Hawthorn Parkway, Suite 400
Vernon Hills, IL 60061

Attn: Mr. Carlos Serna

Date: Friday September 21st, 1990

RE: TA-MW01
Project # 1989-06-03-0000
Lab ID: 9008G010-003
Sample Date: 08/30/90
Date Received: 08/31/90
Units: UG/L

VOLATILES BY GC/MS, PRIORITY POLLUTANT LIST

Volatile Compound	Result	Detection Limit	Flag
Chloromethane	BDL	10	U
Bromomethane	BDL	10	U
Vinyl Chloride	BDL	10	U
Chloroethane	BDL	10	U
Methylene Chloride	BDL	5	U
Acetone	BDL	10	U
1,1-Dichloroethene	BDL	5	U
1,1-Dichloroethane	BDL	5	U
1,2-Dichloroethene (total)	BDL	5	U
Chloroform	BDL	5	U
1,2-Dichloroethane	BDL	5	U
1,1,1-Trichloroethane	BDL	5	U
Carbon Tetrachloride	BDL	5	U
Bromodichloromethane	BDL	5	U
1,2-Dichloropropane	BDL	5	U
cis-1,3-Dichloropropene	BDL	5	U
Trichloroethene	BDL	5	U

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Attn: **Mr. Carlos Serna**

Date: Friday September 21st, 1990

RE: **TA-MW01**
Project # 1989-06-03-0000
Lab ID: **9008G010-003**
Sample Date: 08/30/90
Date Received: 08/31/90
Units: UG/L

VOLATILES BY GC/MS, PRIORITY POLLUTANT LIST

Volatile Compound	Result	Detection Limit	Flag
Dibromochloromethane	BDL	5	U
1,1,2-Trichloroethane	BDL	5	U
Benzene	BDL	5	U
Trans-1,3-Dichloropropene	BDL	5	U
Bromoform	BDL	5	U
Tetrachloroethene	BDL	5	U
1,1,2,2-Tetrachloroethane	BDL	5	U
Toluene	BDL	5	U
Chlorobenzene	BDL	5	U
Ethylbenzene	BDL	5	U
Xylene (total)	BDL	5	U
Acrolein	BDL	500	U
Acrylonitrile	BDL	100	U
Dichlorodifluoromethane	BDL	20	U
Trichlorofluoromethane	BDL	10	U
Bis(chloromethyl)ether	BDL	20	U
2-Chloroethylvinylether	BDL	10	U

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Attn: Mr. Carlos Serna

Date: Friday September 21st, 1990

RE: TA-MW01
Project # 1989-06-03-0000
Lab ID: 9008G010-003
Sample Date: 08/30/90
Date Received: 08/31/90
Units: UG/L

Tentatively Identified Compounds

No Volatile Compounds greater than 10% of the nearest internal standard were tentatively identified by mass spectral library search. This is exclusive of any target compounds, surrogates or internal standards.

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Attn: **Mr. Carlos Serna**

Date: Wednesday September 19th, 1990

RE: **TA-MW02**
Project # 1989-06-03-0000
Lab ID: **9008G010-004**
Sample Date: 08/30/90
Date Received: 08/31/90

Inorganic Client Data Report

Parameters	Result	Units	Reporting Limit
Arsenic, Soluble	0.0040 u	mg/L	0.0040
Cadmium, Soluble	0.0040 u	mg/L	0.0040
Chromium, Soluble	0.020 u	mg/L	0.020
Copper, Soluble	0.020 u	mg/L	0.020
Mercury, Soluble	0.00021	mg/L	0.00020
Lead, Soluble	0.0037	mg/L	0.0020

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Attn: **Mr. Carlos Serna**

Date: Friday September 21st, 1990

RE: **TA-MW02**
Project # 1989-06-03-0000
Lab ID: **9008G010-004**
Sample Date: 08/30/90
Date Received: 08/31/90
Units: UG/L

VOLATILES BY GC/MS, PRIORITY POLLUTANT LIST

Volatile Compound	Result	Detection Limit	Flag
Chloromethane	BDL	10	U
Bromomethane	BDL	10	U
Vinyl Chloride	BDL	10	U
Chloroethane	BDL	10	U
Methylene Chloride	BDL	5	U
Acetone	BDL	10	U
1,1-Dichloroethene	BDL	5	U
1,1-Dichloroethane	BDL	5	U
1,2-Dichloroethene (total)	BDL	5	U
Chloroform	BDL	5	U
1,2-Dichloroethane	BDL	5	U
1,1,1-Trichloroethane	100	5	
Carbon Tetrachloride	BDL	5	U
Bromodichloromethane	BDL	5	U
1,2-Dichloropropane	BDL	5	U
cis-1,3-Dichloropropene	BDL	5	U
Trichloroethene	11	5	

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Attn: Mr. Carlos Serna

Date: Friday September 21st, 1990

RE: TA-MW02
Project # 1989-06-03-0000
Lab ID: 9008G010-004
Sample Date: 08/30/90
Date Received: 08/31/90
Units: UG/L

VOLATILES BY GC/MS, PRIORITY POLLUTANT LIST

Volatile Compound	Result	Detection Limit	Flag
Dibromochloromethane	BDL	5	U
1,1,2-Trichloroethane	BDL	5	U
Benzene	BDL	5	U
Trans-1,3-Dichloropropene	BDL	5	U
Bromoform	BDL	5	U
Tetrachloroethene	76	5	
1,1,2,2-Tetrachloroethane	BDL	5	U
Toluene	BDL	5	U
Chlorobenzene	BDL	5	U
Ethylbenzene	BDL	5	U
Xylene (total)	BDL	5	U
Acrolein	BDL	500	U
Acrylonitrile	BDL	100	U
Dichlorodifluoromethane	BDL	20	U
Trichlorofluoromethane	BDL	10	U
Bis(chloromethyl)ether	BDL	20	U
2-Chloroethylvinylether	BDL	10	U

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Attn: Mr. Carlos Serna

Date: Friday September 21st, 1990

RE: TA-MW02
Project # 1989-06-03-0000
Lab ID: 9008G010-004
Sample Date: 08/30/90
Date Received: 08/31/90
Units: UG/L

Tentatively Identified Compounds

1 Volatile Compounds greater than 10% of the nearest internal standard were tentatively identified by mass spectral library search. This is exclusive of any target compounds, surrogates or internal standards.

Volatile Compound	Retention Time	Estimated Concentration
Unknown	2.12	10 J

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ANALYTICAL REPORT

To: Techalloy
Roy F. Weston, Incorporated
3 Hawthorn Parkway, Suite 400
Vernon Hills, IL 60061

Attn: Mr. Carlos Serna

Date: Wednesday September 19th, 1990

RE: TA-MW03
Project # 1989-06-03-0000
Lab ID: 9008G010-005
Sample Date: 08/30/90
Date Received: 08/31/90

Inorganic Client Data Report

Parameters	Result	Units	Reporting Limit
Arsenic, Soluble	0.0043	mg/L	0.0040
Cadmium, Soluble	0.0040 u	mg/L	0.0040
Chromium, Soluble	0.020 u	mg/L	0.020
Copper, Soluble	0.020 u	mg/L	0.020
Mercury, Soluble	0.00020 u	mg/L	0.00020
Lead, Soluble	0.0020 u	mg/L	0.0020

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Attn: Mr. Carlos Serna

Date: Friday September 21st, 1990

RE: TA-MW03
Project # 1989-06-03-0000
Lab ID: 9008G010-005
Sample Date: 08/30/90
Date Received: 08/31/90
Units: UG/L

VOLATILES BY GC/MS, PRIORITY POLLUTANT LIST

Volatile Compound	Result	Detection Limit	Flag
Chloromethane	BDL	10	U
Bromomethane	BDL	10	U
Vinyl Chloride	BDL	10	U
Chloroethane	BDL	10	U
Methylene Chloride	BDL	5	U
Acetone	BDL	10	U
1,1-Dichloroethene	BDL	5	U
1,1-Dichloroethane	BDL	5	U
1,2-Dichloroethene (total)	BDL	5	U
Chloroform	BDL	5	U
1,2-Dichloroethane	BDL	5	U
1,1,1-Trichloroethane	BDL	5	U
Carbon Tetrachloride	BDL	5	U
Bromodichloromethane	BDL	5	U
1,2-Dichloropropane	BDL	5	U
cis-1,3-Dichloropropene	BDL	5	U
Trichloroethene	BDL	5	U

WESTON-GULF COAST LABORATORIES, INC.
2417 Bond St., University Park, Illinois 60466
Phones: (708) 534-5200 (219) 885-7077 (815) 723-7533

ANALYTICAL REPORT

To: **Techalloy**
Roy F. Weston, Incorporated
3 Hawthorn Parkway, Suite 400
Vernon Hills, IL 60061

Attn: **Mr. Carlos Serna**

Date: Friday September 21st, 1990

RE: **TA-MW03**
Project # 1989-06-03-0000
Lab ID: **9008G010-005**
Sample Date: 08/30/90
Date Received: 08/31/90
Units: UG/L

VOLATILES BY GC/MS, PRIORITY POLLUTANT LIST

Volatile Compound	Result	Detection Limit	Flag
Dibromochloromethane	BDL	5	U
1,1,2-Trichloroethane	BDL	5	U
Benzene	BDL	5	U
Trans-1,3-Dichloropropene	BDL	5	U
Bromoform	BDL	5	U
Tetrachloroethene	BDL	5	U
1,1,2,2-Tetrachloroethane	BDL	5	U
Toluene	BDL	5	U
Chlorobenzene	BDL	5	U
Ethylbenzene	BDL	5	U
Xylene (total)	BDL	5	U
Acrolein	BDL	500	U
Acrylonitrile	BDL	100	U
Dichlorodifluoromethane	BDL	20	U
Trichlorofluoromethane	BDL	10	U
Bis(chloromethyl)ether	BDL	20	U
2-Chloroethylvinylether	BDL	10	U

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ANALYTICAL REPORT

To: Techalloy
Roy F. Weston, Incorporated
3 Hawthorn Parkway, Suite 400
Vernon Hills, IL 60061

Attn: Mr. Carlos Serna

Date: Friday September 21st, 1990

RE: TA-MW03
Project # 1989-06-03-0000
Lab ID: 9008G010-005
Sample Date: 08/30/90
Date Received: 08/31/90
Units: UG/L

Tentatively Identified Compounds

No Volatile Compounds greater than 10% of the nearest internal standard were tentatively identified by mass spectral library search. This is exclusive of any target compounds, surrogates or internal standards.

WESTON-GULF COAST LABORATORIES, INC.
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ANALYTICAL REPORT

To: **Techalloy**
Roy F. Weston, Incorporated
3 Hawthorn Parkway, Suite 400
Vernon Hills, IL 60061

Attn: **Mr. Carlos Serna**

Date: Wednesday September 19th, 1990

RE: **TA-MW04**
Project # 1989-06-03-0000
Lab ID: **9008G010-006**
Sample Date: 08/30/90
Date Received: 08/31/90

Inorganic Client Data Report

Parameters	Result	Units	Reporting Limit
Arsenic, Soluble	0.0040 u	mg/L	0.0040
Cadmium, Soluble	0.0040 u	mg/L	0.0040
Chromium, Soluble	0.020 u	mg/L	0.020
Copper, Soluble	0.020 u	mg/L	0.020
Mercury, Soluble	0.00020 u	mg/L	0.00020
Lead, Soluble	0.0032	mg/L	0.0020

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ANALYTICAL REPORT

To: Techalloy
Roy F. Weston, Incorporated
3 Hawthorn Parkway, Suite 400
Vernon Hills, IL 60061

Attn: Mr. Carlos Serna

Date: Friday September 21st, 1990

RE: TA-MW04
Project # 1989-06-03-0000
Lab ID: 9008G010-006
Sample Date: 08/30/90
Date Received: 08/31/90
Units: UG/L

VOLATILES BY GC/MS, PRIORITY POLLUTANT LIST

Volatile Compound	Result	Detection Limit	Flag
Chloromethane	BDL	10	U
Bromomethane	BDL	10	U
Vinyl Chloride	BDL	10	U
Chloroethane	BDL	10	U
Methylene Chloride	BDL	5	U
Acetone	BDL	10	U
1,1-Dichloroethene	190	5	
1,1-Dichloroethane	200	5	
1,2-Dichloroethene (total)	97	5	
Chloroform	BDL	5	U
1,2-Dichloroethane	BDL	5	U
1,1,1-Trichloroethane	E	5	
Carbon Tetrachloride	BDL	5	U
Bromodichloromethane	BDL	5	U
1,2-Dichloropropane	BDL	5	U
cis-1,3-Dichloropropene	BDL	5	U
Trichloroethene	270	5	

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Attn: Mr. Carlos Serna

Date: Friday September 21st, 1990

RE: TA-MW04
Project # 1989-06-03-0000
Lab ID: 9008G010-006
Sample Date: 08/30/90
Date Received: 08/31/90
Units: UG/L

VOLATILES BY GC/MS, PRIORITY POLLUTANT LIST

Volatile Compound	Result	Detection Limit	Flag
Dibromochloromethane	BDL	5	U
1,1,2-Trichloroethane	18	5	
Benzene	BDL	5	U
Trans-1,3-Dichloropropene	BDL	5	U
Bromoform	BDL	5	U
Tetrachloroethene	E	5	
1,1,2,2-Tetrachloroethane	BDL	5	U
Toluene	BDL	5	U
Chlorobenzene	BDL	5	U
Ethylbenzene	BDL	5	U
Xylene (total)	BDL	5	U
Acrolein	BDL	500	U
Acrylonitrile	BDL	100	U
Dichlorodifluoromethane	BDL	20	U
Trichlorofluoromethane	BDL	10	U
Bis(chloromethyl)ether	BDL	20	U
2-Chloroethylvinylether	BDL	10	U

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Attn: Mr. Carlos Serna

Date: Friday September 21st, 1990

RE: TA-MW04
Project # 1989-06-03-0000
Lab ID: 9008G010-006
Sample Date: 08/30/90
Date Received: 08/31/90
Units: UG/L

Tentatively Identified Compounds

No Volatile Compounds greater than 10% of the nearest internal standard were tentatively identified by mass spectral library search. This is exclusive of any target compounds, surrogates or internal standards.

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Attn: Mr. Carlos Serna

Date: Friday September 21st, 1990

RE: TA-MW04
Project # 1989-06-03-0000
Lab ID: 9008G010-006 DL
Sample Date: 08/30/90
Date Received: 08/31/90
Units: UG/L

VOLATILES BY GC/MS, PRIORITY POLLUTANT LIST

Volatile Compound	Result	Detection Limit	Flag
1,1,1-Trichloroethane	E	50	
Tetrachloroethene	1000	50	

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Attn: Mr. Carlos Serna

Date: Friday September 21st, 1990

RE: TA-MW04
Project # 1989-06-03-0000
Lab ID: 9008G010-006 DL
Sample Date: 08/30/90
Date Received: 08/31/90
Units: UG/L

VOLATILES BY GC/MS, PRIORITY POLLUTANT LIST

Volatile Compound	Result	Detection Limit	Flag
1,1,1-Trichloroethane	6000	250	

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To: Techalloy
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Vernon Hills, IL 60061

Attn: Mr. Carlos Serna

Date: Wednesday September 19th, 1990

RE: TA-MW05
Project # 1989-06-03-0000
Lab ID: 9008G010-007
Sample Date: 08/30/90
Date Received: 08/31/90

Inorganic Client Data Report

Parameters	Result	Units	Reporting Limit
Arsenic, Soluble	0.0040 u	mg/L	0.0040
Cadmium, Soluble	0.0040 u	mg/L	0.0040
Chromium, Soluble	0.020 u	mg/L	0.020
Copper, Soluble	0.020 u	mg/L	0.020
Mercury, Soluble	0.00020 u	mg/L	0.00020
Lead, Soluble	0.0020 u	mg/L	0.0020

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To: Techalloy
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3 Hawthorn Parkway, Suite 400
Vernon Hills, IL 60061

Attn: Mr. Carlos Serna

Date: Friday September 21st, 1990

RE: TA-MW05
Project # 1989-06-03-0000
Lab ID: 9008G010-007
Sample Date: 08/30/90
Date Received: 08/31/90
Units: UG/L

VOLATILES BY GC/MS, PRIORITY POLLUTANT LIST

Volatile Compound	Result	Detection Limit	Flag
Chloromethane	BDL	10	U
Bromomethane	BDL	10	U
Vinyl Chloride	BDL	10	U
Chloroethane	BDL	10	U
Methylene Chloride	BDL	5	U
Acetone	BDL	10	U
1,1-Dichloroethene	210	5	
1,1-Dichloroethane	95	5	
1,2-Dichloroethene (total)	48	5	
Chloroform	BDL	5	U
1,2-Dichloroethane	BDL	5	U
1,1,1-Trichloroethane	E	5	
Carbon Tetrachloride	BDL	5	U
Bromodichloromethane	BDL	5	U
1,2-Dichloropropane	BDL	5	U
cis-1,3-Dichloropropene	BDL	5	U
Trichloroethene	110	5	

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Date: Friday September 21st, 1990

RE: TA-MW05
Project # 1989-06-03-0000
Lab ID: 9008G010-007
Sample Date: 08/30/90
Date Received: 08/31/90
Units: UG/L

VOLATILES BY GC/MS, PRIORITY POLLUTANT LIST

Volatile Compound	Result	Detection Limit	Flag
Dibromochloromethane	BDL	5	U
1,1,2-Trichloroethane	9	5	
Benzene	BDL	5	U
Trans-1,3-Dichloropropene	BDL	5	U
Bromoform	BDL	5	U
Tetrachloroethene	E	5	
1,1,2,2-Tetrachloroethane	BDL	5	U
Toluene	BDL	5	U
Chlorobenzene	BDL	5	U
Ethylbenzene	BDL	5	U
Xylene (total)	BDL	5	U
Acrolein	BDL	500	U
Acrylonitrile	BDL	100	U
Dichlorodifluoromethane	BDL	20	U
Trichlorofluoromethane	BDL	10	U
Bis(chloromethyl)ether	BDL	20	U
2-Chloroethylvinylether	BDL	10	U

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Attn: Mr. Carlos Serna

Date: Friday September 21st, 1990

RE: TA-MW05
Project # 1989-06-03-0000
Lab ID: 9008G010-007
Sample Date: 08/30/90
Date Received: 08/31/90
Units: UG/L

Tentatively Identified Compounds

No Volatile Compounds greater than 10% of the nearest internal standard were tentatively identified by mass spectral library search. This is exclusive of any target compounds, surrogates or internal standards.

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ANALYTICAL REPORT

To: **Techalloy**
Roy F. Weston, Incorporated
3 Hawthorn Parkway, Suite 400
Vernon Hills, IL 60061

Attn: **Mr. Carlos Serna**

Date: Friday September 21st, 1990

RE: **TA-MW05**
Project # 1989-06-03-0000
Lab ID: **9008G010-007 DL**
Sample Date: 08/30/90
Date Received: 08/31/90
Units: UG/L

VOLATILES BY GC/MS, PRIORITY POLLUTANT LIST

Volatile Compound	Result	Detection Limit	Flag
1,1,1-Trichloroethane	E	50	
Tetrachloroethene	620	50	

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Roy F. Weston, Incorporated
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Attn: Mr. Carlos Serna

Date: Friday September 21st, 1990

RE: TA-MW05
Project # 1989-06-03-0000
Lab ID: 9008G010-007 DL
Sample Date: 08/30/90
Date Received: 08/31/90
Units: UG/L

VOLATILES BY GC/MS, PRIORITY POLLUTANT LIST

Volatile Compound	Result	Detection Limit	Flag
1,1,1-Trichloroethane	5600	250	

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ANALYTICAL REPORT

To: **Techalloy**
Roy F. Weston, Incorporated
3 Hawthorn Parkway, Suite 400
Vernon Hills, IL 60061

Attn: **Mr. Carlos Serna**

Date: Wednesday September 19th, 1990

RE: **TA-MW05D**
Project # 1989-06-03-0000
Lab ID: 9008G010-008
Sample Date: 08/30/90
Date Received: 08/31/90

Inorganic Client Data Report

Parameters	Result	Units	Reporting Limit
Arsenic, Soluble	0.0040 u	mg/L	0.0040
Cadmium, Soluble	0.0040 u	mg/L	0.0040
Chromium, Soluble	0.020 u	mg/L	0.020
Copper, Soluble	0.043	mg/L	0.020
Mercury, Soluble	0.00020 u	mg/L	0.00020
Lead, Soluble	0.0084	mg/L	0.0020

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ANALYTICAL REPORT

To: Techalloy
Roy F. Weston, Incorporated
3 Hawthorn Parkway, Suite 400
Vernon Hills, IL 60061

Attn: Mr. Carlos Serna

Date: Friday September 21st, 1990

RE: TA-MW05D
Project # 1989-06-03-0000
Lab ID: 9008G010-008
Sample Date: 08/30/90
Date Received: 08/31/90
Units: UG/L

VOLATILES BY GC/MS, PRIORITY POLLUTANT LIST

Volatile Compound	Result	Detection Limit	Flag
Chloromethane	BDL	10	U
Bromomethane	BDL	10	U
Vinyl Chloride	BDL	10	U
Chloroethane	BDL	10	U
Methylene Chloride	BDL	5	U
Acetone	BDL	10	U
1,1-Dichloroethene	BDL	5	U
1,1-Dichloroethane	BDL	5	U
1,2-Dichloroethene (total)	BDL	5	U
Chloroform	BDL	5	U
1,2-Dichloroethane	BDL	5	U
1,1,1-Trichloroethane	E	5	
Carbon Tetrachloride	BDL	5	U
Bromodichloromethane	BDL	5	U
1,2-Dichloropropane	BDL	5	U
cis-1,3-Dichloropropene	BDL	5	U
Trichloroethene	E	5	

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Attn: Mr. Carlos Serna

Date: Friday September 21st, 1990

RE: TA-MW05D
Project # 1989-06-03-0000
Lab ID: 9008G010-008
Sample Date: 08/30/90
Date Received: 08/31/90
Units: UG/L

VOLATILES BY GC/MS, PRIORITY POLLUTANT LIST

Volatile Compound	Result	Detection Limit	Flag
Dibromochloromethane	BDL	5	U
1,1,2-Trichloroethane	BDL	5	U
Benzene	BDL	5	U
Trans-1,3-Dichloropropene	BDL	5	U
Bromoform	BDL	5	U
Tetrachloroethene	BDL	5	U
1,1,2,2-Tetrachloroethane	BDL	5	U
Toluene	BDL	5	U
Chlorobenzene	BDL	5	U
Ethylbenzene	BDL	5	U
Xylene (total)	BDL	5	U
Acrolein	BDL	500	U
Acrylonitrile	BDL	100	U
Dichlorodifluoromethane	BDL	20	U
Trichlorofluoromethane	BDL	10	U
Bis(chloromethyl)ether	BDL	20	U
2-Chloroethylvinylether	BDL	10	U

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Date: Friday September 21st, 1990

RE: TA-MW05D
Project # 1989-06-03-0000
Lab ID: 9008G010-008
Sample Date: 08/30/90
Date Received: 08/31/90
Units: UG/L

Tentatively Identified Compounds

No Volatile Compounds greater than 10% of the nearest internal standard were tentatively identified by mass spectral library search. This is exclusive of any target compounds, surrogates or internal standards.

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Date: Friday September 21st, 1990

RE: TA-MW05D
Project # 1989-06-03-0000
Lab ID: 9008G010-008 DL
Sample Date: 08/30/90
Date Received: 08/31/90
Units: UG/L

VOLATILES BY GC/MS, PRIORITY POLLUTANT LIST

Volatile Compound	Result	Detection Limit	Flag
1,1,1-Trichloroethane	310	25	
Trichloroethene	270	25	

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To: Techalloy
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Attn: Mr. Carlos Serna

Date: Wednesday September 19th, 1990

RE: TA-MW06
Project # 1989-06-03-0000
Lab ID: 9008G010-009
Sample Date: 08/30/90
Date Received: 08/31/90

Inorganic Client Data Report

Parameters	Result	Units	Reporting Limit
Arsenic, Soluble	0.0040 u	mg/L	0.0040
Cadmium, Soluble	0.0040 u	mg/L	0.0040
Chromium, Soluble	0.020 u	mg/L	0.020
Copper, Soluble	0.020 u	mg/L	0.020
Mercury, Soluble	0.00020 u	mg/L	0.00020
Lead, Soluble	0.036	mg/L	0.0020

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Attn: Mr. Carlos Serna

Date: Friday September 21st, 1990

RE: TA-MW06
Project # 1989-06-03-0000
Lab ID: 9008G010-009
Sample Date: 08/30/90
Date Received: 08/31/90
Units: UG/L

VOLATILES BY GC/MS, PRIORITY POLLUTANT LIST

Volatile Compound	Result	Detection Limit	Flag
Chloromethane	BDL	10	U
Bromomethane	BDL	10	U
Vinyl Chloride	BDL	10	U
Chloroethane	BDL	10	U
Methylene Chloride	BDL	5	U
Acetone	BDL	10	U
1,1-Dichloroethene	BDL	5	U
1,1-Dichloroethane	BDL	5	U
1,2-Dichloroethene (total)	BDL	5	U
Chloroform	BDL	5	U
1,2-Dichloroethane	BDL	5	U
1,1,1-Trichloroethane	39	5	
Carbon Tetrachloride	BDL	5	U
Bromodichloromethane	BDL	5	U
1,2-Dichloropropane	BDL	5	U
cis-1,3-Dichloropropene	BDL	5	U
Trichloroethene	BDL	5	U

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RE: **TA-MW06**
Project # 1989-06-03-0000
Lab ID: **9008G010-009**
Sample Date: 08/30/90
Date Received: 08/31/90
Units: UG/L

VOLATILES BY GC/MS, PRIORITY POLLUTANT LIST

Volatile Compound	Result	Detection Limit	Flag
Dibromochloromethane	BDL	5	U
1,1,2-Trichloroethane	BDL	5	U
Benzene	BDL	5	U
Trans-1,3-Dichloropropene	BDL	5	U
Bromoform	BDL	5	U
Tetrachloroethene	52	5	
1,1,2,2-Tetrachloroethane	BDL	5	U
Toluene	BDL	5	U
Chlorobenzene	BDL	5	U
Ethylbenzene	BDL	5	U
Xylene (total)	BDL	5	U
Acrolein	BDL	500	U
Acrylonitrile	BDL	100	U
Dichlorodifluoromethane	BDL	20	U
Trichlorofluoromethane	BDL	10	U
Bis(chloromethyl)ether	BDL	20	U
2-Chloroethylvinylether	BDL	10	U

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Lab ID: **9008G010-009**
Sample Date: 08/30/90
Date Received: 08/31/90
Units: UG/L

Tentatively Identified Compounds

No Volatile Compounds greater than 10% of the nearest internal standard were tentatively identified by mass spectral library search. This is exclusive of any target compounds, surrogates or internal standards.

WESTON
MANAGERS DESIGNERS/CONSULTANTS

WESTON-GULF COAST LABORATORIES, INC.
2417 Bond St., University Park, Illinois 60466
Phones: (708) 534-5200 (219) 885-7077 (815) 723-7533

ANALYTICAL REPORT

To: **Techalloy**
Roy F. Weston, Incorporated
3 Hawthorn Parkway, Suite 400
Vernon Hills, IL 60061

Attn: **Mr. Carlos Serna**

Date: Wednesday September 19th, 1990

RE: **TA-MW07**
Project # 1989-06-03-0000
Lab ID: **9008G010-010**
Sample Date: 08/30/90
Date Received: 08/31/90

Inorganic Client Data Report

Parameters	Result	Units	Reporting Limit
Arsenic, Soluble	0.0040 u	mg/L	0.0040
Cadmium, Soluble	0.0040 u	mg/L	0.0040
Chromium, Soluble	0.020 u	mg/L	0.020
Copper, Soluble	0.020 u	mg/L	0.020
Mercury, Soluble	0.00020 u	mg/L	0.00020
Lead, Soluble	0.0072	mg/L	0.0020

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ANALYTICAL REPORT

To: Techalloy
Roy F. Weston, Incorporated
3 Hawthorn Parkway, Suite 400
Vernon Hills, IL 60061

Attn: Mr. Carlos Serna

Date: Friday September 21st, 1990

RE: TA-MW07
Project # 1989-06-03-0000
Lab ID: 9008G010-010
Sample Date: 08/30/90
Date Received: 08/31/90
Units: UG/L

VOLATILES BY GC/MS, PRIORITY POLLUTANT LIST

Volatile Compound	Result	Detection Limit	Flag
Chloromethane	BDL	10	U
Bromomethane	BDL	10	U
Vinyl Chloride	BDL	10	U
Chloroethane	BDL	10	U
Methylene Chloride	BDL	5	U
Acetone	BDL	10	U
1,1-Dichloroethene	85	5	
1,1-Dichloroethane	59	5	
1,2-Dichloroethene (total)	24	5	
Chloroform	BDL	5	U
1,2-Dichloroethane	BDL	5	U
1,1,1-Trichloroethane	E	5	
Carbon Tetrachloride	BDL	5	U
Bromodichloromethane	BDL	5	U
1,2-Dichloropropane	BDL	5	U
cis-1,3-Dichloropropene	BDL	5	U
Trichloroethene	140	5	

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Lab ID: 9008G010-010
Sample Date: 08/30/90
Date Received: 08/31/90
Units: UG/L

VOLATILES BY GC/MS, PRIORITY POLLUTANT LIST

Volatile Compound	Result	Detection Limit	Flag
Dibromochloromethane	BDL	5	U
1,1,2-Trichloroethane	BDL	5	U
Benzene	BDL	5	U
Trans-1,3-Dichloropropene	BDL	5	U
Bromoform	BDL	5	U
Tetrachloroethene	E	5	
1,1,2,2-Tetrachloroethane	BDL	5	U
Toluene	BDL	5	U
Chlorobenzene	BDL	5	U
Ethylbenzene	BDL	5	U
Xylene (total)	BDL	5	U
Acrolein	BDL	500	U
Acrylonitrile	BDL	100	U
Dichlorodifluoromethane	BDL	20	U
Trichlorofluoromethane	BDL	10	U
Bis(chloromethyl)ether	BDL	20	U
2-Chloroethylvinylether	BDL	10	U

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Project # 1989-06-03-0000
Lab ID: **9008G010-010**
Sample Date: 08/30/90
Date Received: 08/31/90
Units: UG/L

Tentatively Identified Compounds

No Volatile Compounds greater than 10% of the nearest internal standard were tentatively identified by mass spectral library search. This is exclusive of any target compounds, surrogates or internal standards.

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Attn: Mr. Carlos Serna

Date: Friday September 21st, 1990

RE: TA-MW07
Project # 1989-06-03-0000
Lab ID: 9008G010-010 DL
Sample Date: 08/30/90
Date Received: 08/31/90
Units: UG/L

VOLATILES BY GC/MS, PRIORITY POLLUTANT LIST

Volatile Compound	Result	Detection Limit	Flag
1,1,1-Trichloroethane	E	25	
Tetrachloroethene	370	25	

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Attn: Mr. Carlos Serna

Date: Friday September 21st, 1990

RE: TA-MW07
Project # 1989-06-03-0000
Lab ID: 9008G010-010 DL
Sample Date: 08/30/90
Date Received: 08/31/90
Units: UG/L

VOLATILES BY GC/MS, PRIORITY POLLUTANT LIST

Volatile Compound	Result	Detection Limit	Flag
1,1,1-Trichloroethane	2800	250	

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Attn: Mr. Carlos Serna

Date: Monday September 10th, 1990

RE: TA-MW07
Project # 1989-06-03-0000
Lab ID: 9008G010-010
Sample Date: 08/30/90
Date Received: 08/31/90
Units: UG/L

SEMIVOLATILES BY GC/MS, PRIORITY POLLUTANT LIST

Semivolatile Compound	Result	Detection Limit	Flag
Phenol	BDL	8	U
bis(2-Chloroethyl)ether	BDL	8	U
2-Chlorophenol	BDL	8	U
1,3-Dichlorobenzene	BDL	8	U
1,4-Dichlorobenzene	BDL	8	U
1,2-Dichlorobenzene	BDL	8	U
bis(2-Chloroisopropyl)ether	BDL	8	U
N-Nitroso-Di-n-propylamine	BDL	8	U
Hexachloroethane	BDL	8	U
Nitrobenzene	BDL	8	U
Isophorone	BDL	8	U
2-Nitrophenol	BDL	8	U
2,4-Dimethylphenol	BDL	8	U
bis(2-Chloroethoxy)methane	BDL	8	U
2,4-Dichlorophenol	BDL	8	U
1,2,4-Trichlorobenzene	BDL	8	U
Naphthalene	BDL	8	U

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Units: UG/L

SEMIVOLATILES BY GC/MS, PRIORITY POLLUTANT LIST

Semivolatile Compound	Result	Detection Limit	Flag
Hexachlorobutadiene	BDL	8	U
4-Chloro-3-methylphenol	BDL	8	U
Hexachlorocyclopentadiene	BDL	8	U
2,4,6-Trichlorophenol	BDL	8	U
2-Chloronaphthalene	BDL	8	U
Dimethylphthalate	BDL	8	U
Acenaphthylene	BDL	8	U
2,6-Dinitrotoluene	BDL	8	U
Acenaphthene	BDL	8	U
2,4-Dinitrophenol	BDL	42	U
4-Nitrophenol	BDL	42	U
2,4-Dinitrotoluene	BDL	8	U
Diethylphthalate	BDL	8	U
4-Chlorophenyl-phenylether	BDL	8	U
Fluorene	BDL	8	U
4,6-Dinitro-2-methylphenol	BDL	42	U
N-Nitrosodiphenylamine (1)	BDL	8	U

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Units: UG/L

SEMIVOLATILES BY GC/MS, PRIORITY POLLUTANT LIST

Semivolatile Compound	Result	Detection Limit	Flag
4-Bromophenyl-phenylether	BDL	8	U
Hexachlorobenzene	BDL	8	U
Pentachlorophenol	BDL	42	U
Phenanthrene	BDL	8	U
Anthracene	BDL	8	U
Di-n-Butylphthalate	BDL	8	U
Fluoranthene	BDL	8	U
Pyrene	BDL	8	U
Butylbenzylphthalate	BDL	8	U
3,3'-Dichlorobenzidine	BDL	17	U
Benzo(a)anthracene	BDL	8	U
Chrysene	BDL	8	U
bis(2-Ethylhexyl)phthalate	1	8	J
Di-n-Octyl phthalate	BDL	8	U
Benzo(b)fluoranthene	BDL	8	U
Benzo(k)fluoranthene	BDL	8	U
Benzo(a)pyrene	BDL	8	U

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Units: UG/L

SEMIVOLATILES BY GC/MS, PRIORITY POLLUTANT LIST

Semivolatile Compound	Result	Detection Limit	Flag
Indeno(1,2,3-cd)pyrene	BDL	8	U
Dibenzo(a,h)anthracene	BDL	8	U
Benzo(g,h,i)perylene	BDL	8	U
1,2-Diphenylhydrazine	BDL	8	U
N-Nitrosodimethylamine	BDL	8	U
Benzidine	BDL	85	U

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Lab ID: 9008G010-010
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Units: UG/L

Tentatively Identified Compounds

5 Semivolatile Compounds greater than 10% of the nearest internal standard were tentatively identified by mass spectral library search. This is exclusive of any target compounds, surrogates or internal standards.

Semivolatile Compound	Retention Time	Estimated Concentration	
TETRACHLOROETHENE	5.35	90	J
Unknown	5.98	4	JB
ETHENYL METHYL PYRIDINE	20.84	4	J
N,N-DIETHYL-3-METHYLBENZAMID	21.67	200	J
Unknown	28.20	6	JB

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To: Techalloy
Roy F. Weston, Incorporated
3 Hawthorn Parkway, Suite 400
Vernon Hills, IL 60061

Attn: Mr. Carlos Serna

Date: Wednesday September 19th, 1990

RE: TA-MW08
Project # 1989-06-03-0000
Lab ID: 9008G010-011
Sample Date: 08/30/90
Date Received: 08/31/90

Inorganic Client Data Report

Parameters	Result	Units	Reporting Limit
Arsenic, Soluble	0.0040 u	mg/L	0.0040
Cadmium, Soluble	0.0040 u	mg/L	0.0040
Chromium, Soluble	0.020 u	mg/L	0.020
Copper, Soluble	0.020 u	mg/L	0.020
Mercury, Soluble	0.00020 u	mg/L	0.00020
Lead, Soluble	0.0028	mg/L	0.0020

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To: Techalloy
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3 Hawthorn Parkway, Suite 400
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Attn: Mr. Carlos Serna

Date: Friday September 21st, 1990

RE: TA-MW08
Project # 1989-06-03-0000
Lab ID: 9008G010-011
Sample Date: 08/30/90
Date Received: 08/31/90
Units: UG/L

VOLATILES BY GC/MS, PRIORITY POLLUTANT LIST

Volatile Compound	Result	Detection Limit	Flag
Chloromethane	BDL	10	U
Bromomethane	BDL	10	U
Vinyl Chloride	BDL	10	U
Chloroethane	BDL	10	U
Methylene Chloride	BDL	5	U
Acetone	BDL	10	U
1,1-Dichloroethene	BDL	5	U
1,1-Dichloroethane	5	5	
1,2-Dichloroethene (total)	BDL	5	U
Chloroform	BDL	5	U
1,2-Dichloroethane	BDL	5	U
1,1,1-Trichloroethane	190	5	
Carbon Tetrachloride	BDL	5	U
Bromodichloromethane	BDL	5	U
1,2-Dichloropropane	BDL	5	U
cis-1,3-Dichloropropene	BDL	5	U
Trichloroethene	100	5	

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Date: Friday September 21st, 1990

RE: TA-MW08
Project # 1989-06-03-0000
Lab ID: 9008G010-011
Sample Date: 08/30/90
Date Received: 08/31/90
Units: UG/L

VOLATILES BY GC/MS, PRIORITY POLLUTANT LIST

Volatile Compound	Result	Detection Limit	Flag
Dibromochloromethane	BDL	5	U
1,1,2-Trichloroethane	BDL	5	U
Benzene	BDL	5	U
Trans-1,3-Dichloropropene	BDL	5	U
Bromoform	BDL	5	U
Tetrachloroethene	E	5	
1,1,2,2-Tetrachloroethane	BDL	5	U
Toluene	BDL	5	U
Chlorobenzene	BDL	5	U
Ethylbenzene	BDL	5	U
Xylene (total)	BDL	5	U
Acrolein	BDL	500	U
Acrylonitrile	BDL	100	U
Dichlorodifluoromethane	BDL	20	U
Trichlorofluoromethane	BDL	10	U
Bis(chloromethyl)ether	BDL	20	U
2-Chloroethylvinylether	BDL	10	U

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RE: TA-MW08
Project # 1989-06-03-0000
Lab ID: 9008G010-011
Sample Date: 08/30/90
Date Received: 08/31/90
Units: UG/L

Tentatively Identified Compounds

No Volatile Compounds greater than 10% of the nearest internal standard were tentatively identified by mass spectral library search. This is exclusive of any target compounds, surrogates or internal standards.

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Attn: Mr. Carlos Serna

Date: Friday September 21st, 1990

RE: TA-MW08
Project # 1989-06-03-0000
Lab ID: 9008G010-011 DL
Sample Date: 08/30/90
Date Received: 08/31/90
Units: UG/L

VOLATILES BY GC/MS, PRIORITY POLLUTANT LIST

Volatile Compound	Result	Detection Limit	Flag
Tetrachloroethene	270	10	

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To: Techalloy
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3 Hawthorn Parkway, Suite 400
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Attn: Mr. Carlos Serna

Date: Wednesday September 19th, 1990

RE: TA-MW09
Project # 1989-06-03-0000
Lab ID: 9008G010-012
Sample Date: 08/30/90
Date Received: 08/31/90

Inorganic Client Data Report

Parameters	Result	Units	Reporting Limit
Arsenic, Soluble	0.0040 u	mg/L	0.0040
Cadmium, Soluble	0.0040 u	mg/L	0.0040
Chromium, Soluble	0.020 u	mg/L	0.020
Copper, Soluble	0.020 u	mg/L	0.020
Mercury, Soluble	0.00020 u	mg/L	0.00020
Lead, Soluble	0.0034	mg/L	0.0020

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To: Techalloy
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Attn: Mr. Carlos Serna

Date: Friday September 21st, 1990

RE: TA-HBR-Dup
Project # 1989-06-03-0000
Lab ID: 9008G010-014 DL
Sample Date: 08/30/90
Date Received: 08/31/90
Units: UG/L

VOLATILES BY GC/MS, PRIORITY POLLUTANT LIST

Volatile Compound	Result	Detection Limit	Flag
1,1,1-Trichloroethane	3700	100	

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Date: Friday September 21st, 1990

RE: TA-HBR-Dup
Project # 1989-06-03-0000
Lab ID: 9008G010-014 DL
Sample Date: 08/30/90
Date Received: 08/31/90
Units: UG/L

VOLATILES BY GC/MS, PRIORITY POLLUTANT LIST

Volatile Compound	Result	Detection Limit	Flag
1,1,1-Trichloroethane	E	25	
Tetrachloroethene	310	25	

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Sample Date: 08/30/90
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Units: UG/L

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Project # 1989-06-03-0000
Lab ID: **9008G010-014**
Sample Date: 08/30/90
Date Received: 08/31/90
Units: UG/L

VOLATILES BY GC/MS, PRIORITY POLLUTANT LIST

Volatile Compound	Result	Detection Limit	Flag
Dibromochloromethane	BDL	5	U
1,1,2-Trichloroethane	BDL	5	U
Benzene	BDL	5	U
Trans-1,3-Dichloropropene	BDL	5	U
Bromoform	BDL	5	U
Tetrachloroethene	E	5	
1,1,2,2-Tetrachloroethane	BDL	5	U
Toluene	BDL	5	U
Chlorobenzene	BDL	5	U
Ethylbenzene	BDL	5	U
Xylene (total)	BDL	5	U
Acrolein	BDL	500	U
Acrylonitrile	BDL	100	U
Dichlorodifluoromethane	BDL	20	U
Trichlorofluoromethane	BDL	10	U
Bis(chloromethyl)ether	BDL	20	U
2-Chloroethylvinylether	BDL	10	U

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Units: UG/L

VOLATILES BY GC/MS, PRIORITY POLLUTANT LIST

Volatile Compound	Result	Detection Limit	Flag
Chloromethane	BDL	10	U
Bromomethane	BDL	10	U
Vinyl Chloride	BDL	10	U
Chloroethane	BDL	10	U
Methylene Chloride	BDL	5	U
Acetone	BDL	10	U
1,1-Dichloroethene	110	5	
1,1-Dichloroethane	5	5	
1,2-Dichloroethene (total)	8	5	
Chloroform	BDL	5	U
1,2-Dichloroethane	7	5	
1,1,1-Trichloroethane	E	5	
Carbon Tetrachloride	BDL	5	U
Bromodichloromethane	BDL	5	U
1,2-Dichloropropane	BDL	5	U
cis-1,3-Dichloropropene	BDL	5	U
Trichloroethene	24	5	

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Vernon Hills, IL 60061

Attn: Mr. Carlos Serna

Date: Wednesday September 19th, 1990

RE: TA-HBR-Dup
Project # 1989-06-03-0000
Lab ID: 9008G010-014
Sample Date: 08/30/90
Date Received: 08/31/90

Inorganic Client Data Report

Parameters	Result	Units	Reporting Limit
Arsenic, Soluble	0.0040 u	mg/L	0.0040
Cadmium, Soluble	0.0040 u	mg/L	0.0040
Chromium, Soluble	0.020 u	mg/L	0.020
Copper, Soluble	0.020 u	mg/L	0.020
Mercury, Soluble	0.00020 u	mg/L	0.00020
Lead, Soluble	0.0021	mg/L	0.0020

WESTON-GULF COAST LABORATORIES, INC.
2417 Bond St., University Park, Illinois 60466
Phones: (708) 534-5200 (219) 885-7077 (815) 723-7533

ANALYTICAL REPORT

To: Techalloy
Roy F. Weston, Incorporated
3 Hawthorn Parkway, Suite 400
Vernon Hills, IL 60061

Attn: Mr. Carlos Serna

Date: Friday September 21st, 1990

RE: TA-HBR
Project # 1989-06-03-0000
Lab ID: 9008G010-013 DL
Sample Date: 08/30/90
Date Received: 08/31/90
Units: UG/L

VOLATILES BY GC/MS, PRIORITY POLLUTANT LIST

Volatile Compound	Result	Detection Limit	Flag
1,1,1-Trichloroethane	3400	100	

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ANALYTICAL REPORT

To: **Techalloy**
Roy F. Weston, Incorporated
3 Hawthorn Parkway, Suite 400
Vernon Hills, IL 60061

Attn: **Mr. Carlos Serna**

Date: Friday September 21st, 1990

RE: **TA-HBR**
Project # 1989-06-03-0000
Lab ID: **9008G010-013 DL**
Sample Date: 08/30/90
Date Received: 08/31/90
Units: UG/L

VOLATILES BY GC/MS, PRIORITY POLLUTANT LIST

Volatile Compound	Result	Detection Limit	Flag
1,1,1-Trichloroethane	E	25	
Tetrachloroethene	320	25	

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ANALYTICAL REPORT

To: Techalloy
Roy F. Weston, Incorporated
3 Hawthorn Parkway, Suite 400
Vernon Hills, IL 60061

Attn: Mr. Carlos Serna

Date: Friday September 21st, 1990

RE: TA-HBR
Project # 1989-06-03-0000
Lab ID: 9008G010-013
Sample Date: 08/30/90
Date Received: 08/31/90
Units: UG/L

Tentatively Identified Compounds

No Volatile Compounds greater than 10% of the nearest internal standard were tentatively identified by mass spectral library search. This is exclusive of any target compounds, surrogates or internal standards.

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ANALYTICAL REPORT

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Attn: Mr. Carlos Serna

Date: Friday September 21st, 1990

RE: TA-HBR
Project # 1989-06-03-0000
Lab ID: 9008G010-013
Sample Date: 08/30/90
Date Received: 08/31/90
Units: UG/L

VOLATILES BY GC/MS, PRIORITY POLLUTANT LIST

Volatile Compound	Result	Detection Limit	Flag
Dibromochloromethane	BDL	5	U
1,1,2-Trichloroethane	BDL	5	U
Benzene	BDL	5	U
Trans-1,3-Dichloropropene	BDL	5	U
Bromoform	BDL	5	U
Tetrachloroethene	E	5	
1,1,2,2-Tetrachloroethane	BDL	5	U
Toluene	BDL	5	U
Chlorobenzene	BDL	5	U
Ethylbenzene	BDL	5	U
Xylene (total)	BDL	5	U
Acrolein	BDL	500	U
Acrylonitrile	BDL	100	U
Dichlorodifluoromethane	BDL	20	U
Trichlorofluoromethane	BDL	10	U
Bis(chloromethyl)ether	BDL	20	U
2-Chloroethylvinylether	BDL	10	U

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To: Techalloy
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Date: Friday September 21st, 1990

RE: TA-HBR
Project # 1989-06-03-0000
Lab ID: 9008G010-013
Sample Date: 08/30/90
Date Received: 08/31/90
Units: UG/L

VOLATILES BY GC/MS, PRIORITY POLLUTANT LIST

Volatile Compound	Result	Detection Limit	Flag
Chloromethane	BDL	10	U
Bromomethane	BDL	10	U
Vinyl Chloride	BDL	10	U
Chloroethane	BDL	10	U
Methylene Chloride	10	5	
Acetone	BDL	10	U
1,1-Dichloroethene	120	5	
1,1-Dichloroethane	5	5	
1,2-Dichloroethene (total)	8	5	
Chloroform	BDL	5	U
1,2-Dichloroethane	8	5	
1,1,1-Trichloroethane	E	5	
Carbon Tetrachloride	BDL	5	U
Bromodichloromethane	BDL	5	U
1,2-Dichloropropane	BDL	5	U
cis-1,3-Dichloropropene	BDL	5	U
Trichloroethene	24	5	

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ANALYTICAL REPORT

To: Techalloy
Roy F. Weston, Incorporated
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Vernon Hills, IL 60061

Attn: Mr. Carlos Serna

Date: Wednesday September 19th, 1990

RE: TA-HBR
Project # 1989-06-03-0000
Lab ID: 9008G010-013
Sample Date: 08/30/90
Date Received: 08/31/90

Inorganic Client Data Report

Parameters	Result	Units	Reporting Limit
Arsenic, Soluble	0.0040 u	mg/L	0.0040
Cadmium, Soluble	0.0040 u	mg/L	0.0040
Chromium, Soluble	0.020 u	mg/L	0.020
Copper, Soluble	0.020 u	mg/L	0.020
Mercury, Soluble	0.00020 u	mg/L	0.00020
Lead, Soluble	0.0020 u	mg/L	0.0020

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ANALYTICAL REPORT

To: **Techalloy**
Roy F. Weston, Incorporated
3 Hawthorn Parkway, Suite 400
Vernon Hills, IL 60061

Attn: **Mr. Carlos Serna**

Date: Friday September 21st, 1990

RE: **TA-MW09**
Project # 1989-06-03-0000
Lab ID: **9008G010-012**
Sample Date: 08/30/90
Date Received: 08/31/90
Units: UG/L

Tentatively Identified Compounds

No Volatile Compounds greater than 10% of the nearest internal standard were tentatively identified by mass spectral library search. This is exclusive of any target compounds, surrogates or internal standards.

WESTON-GULF COAST LABORATORIES, INC.
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ANALYTICAL REPORT

To: Techalloy
Roy F. Weston, Incorporated
3 Hawthorn Parkway, Suite 400
Vernon Hills, IL 60061

Attn: Mr. Carlos Serna

Date: Friday September 21st, 1990

RE: TA-MW09
Project # 1989-06-03-0000
Lab ID: 9008G010-012
Sample Date: 08/30/90
Date Received: 08/31/90
Units: UG/L

VOLATILES BY GC/MS, PRIORITY POLLUTANT LIST

Volatile Compound	Result	Detection Limit	Flag
Dibromochloromethane	BDL	5	U
1,1,2-Trichloroethane	BDL	5	U
Benzene	BDL	5	U
Trans-1,3-Dichloropropene	BDL	5	U
Bromoform	BDL	5	U
Tetrachloroethene	BDL	5	U
1,1,2,2-Tetrachloroethane	BDL	5	U
Toluene	BDL	5	U
Chlorobenzene	BDL	5	U
Ethylbenzene	BDL	5	U
Xylene (total)	BDL	5	U
Acrolein	BDL	500	U
Acrylonitrile	BDL	100	U
Dichlorodifluoromethane	BDL	20	U
Trichlorofluoromethane	BDL	10	U
Bis(chloromethyl)ether	BDL	20	U
2-Chloroethylvinylether	BDL	10	U

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To: **Techalloy**
Roy F. Weston, Incorporated
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Vernon Hills, IL 60061

Attn: **Mr. Carlos Serna**

Date: Friday September 21st, 1990

RE: **TA-MW09**
Project # 1989-06-03-0000
Lab ID: **9008G010-012**
Sample Date: 08/30/90
Date Received: 08/31/90
Units: UG/L

VOLATILES BY GC/MS, PRIORITY POLLUTANT LIST

Volatile Compound	Result	Detection Limit	Flag
Chloromethane	BDL	10	U
Bromomethane	BDL	10	U
Vinyl Chloride	BDL	10	U
Chloroethane	BDL	10	U
Methylene Chloride	8	5	
Acetone	BDL	10	U
1,1-Dichloroethene	BDL	5	U
1,1-Dichloroethane	BDL	5	U
1,2-Dichloroethene (total)	BDL	5	U
Chloroform	BDL	5	U
1,2-Dichloroethane	BDL	5	U
1,1,1-Trichloroethane	BDL	5	U
Carbon Tetrachloride	BDL	5	U
Bromodichloromethane	BDL	5	U
1,2-Dichloropropane	BDL	5	U
cis-1,3-Dichloropropene	BDL	5	U
Trichloroethene	BDL	5	U

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2417 Bond St., University Park, Illinois 60466
Phones: (708) 534-5200 (219) 885-7077 (815) 723-7533

ANALYTICAL REPORT

To: **Tekalloy**
Roy F. Weston, Incorporated
100 Corporate North, Suite 101
Bannockburn, IL 60015

Attn: **Mr. Carlos Serna**

Date: Friday June 22nd, 1990

RE: **RS04 25' Well**
Project # 1989-06-01-0000
Lab ID: **9006G208-003**
Sample Date: 06/11/90
Date Received: 06/12/90
Units: UG/L

Tentatively Identified Compounds

1 Volatile Compounds greater than 10% of the nearest internal standard were tentatively identified by mass spectral library search. This is exclusive of any target compounds, surrogates or internal standards.

Volatile Compound	Retention Time	Estimated Concentration
3-METHYLPENTANE	18.72	20 J

WESTON-GULF COAST LABORATORIES, INC.
2417 Bond St., University Park, Illinois 60466
Phones: (708) 534-5200 (219) 885-7077 (815) 723-7533

ANALYTICAL REPORT

To: Tekalloy
Roy F. Weston, Incorporated
100 Corporate North, Suite 101
Bannockburn, IL 60015

Attn: Mr. Carlos Serna

Date: Friday June 22nd, 1990

RE: RS04 25' Well
Project # 1989-06-01-0000
Lab ID: 9006G208-003
Sample Date: 06/11/90
Date Received: 06/12/90
Units: UG/L

VOLATILES BY GC/MS, HSL LIST

Volatile Compound	Result	Detection Limit	Flag
1,2-Dichloropropane	BDL	5	U
cis-1,3-Dichloropropene	BDL	5	U
Trichloroethene	BDL	5	U
Dibromochloromethane	BDL	5	U
1,1,2-Trichloroethane	BDL	5	U
Benzene	BDL	5	U
Trans-1,3-Dichloropropene	BDL	5	U
Bromoform	BDL	5	U
4-Methyl-2-pentanone	BDL	10	U
2-Hexanone	BDL	10	U
Tetrachloroethene	BDL	5	U
1,1,2,2-Tetrachloroethane	BDL	5	U
Toluene	BDL	5	U
Chlorobenzene	BDL	5	U
Ethylbenzene	BDL	5	U
Styrene	BDL	5	U
Xylene (total)	BDL	5	U

WESTON-GULF COAST LABORATORIES, INC.
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ANALYTICAL REPORT

To: **Tekalloy**
Roy F. Weston, Incorporated
100 Corporate North, Suite 101
Bannockburn, IL 60015

Attn: **Mr. Carlos Serna**

Date: Friday June 22nd, 1990

RE: **RS04 25' Well**
Project # 1989-06-01-0000
Lab ID: 9006G208-003
Sample Date: 06/11/90
Date Received: 06/12/90
Units: UG/L

VOLATILES BY GC/MS, HSL LIST

Volatile Compound	Result	Detection Limit	Flag
Chloromethane	BDL	10	U
Bromomethane	BDL	10	U
Vinyl Chloride	BDL	10	U
Chloroethane	BDL	10	U
Methylene Chloride	3	5	JB
Acetone	5	10	JB
Carbon Disulfide	BDL	5	U
1,1-Dichloroethene	BDL	5	U
1,1-Dichloroethane	BDL	5	U
1,2-Dichloroethene (total)	BDL	5	U
Chloroform	BDL	5	U
1,2-Dichloroethane	BDL	5	U
2-Butanone	BDL	10	U
1,1,1-Trichloroethane	BDL	5	U
Carbon Tetrachloride	BDL	5	U
Vinyl Acetate	BDL	10	U
Bromodichloromethane	BDL	5	U

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ANALYTICAL REPORT

To: Tekalloy
Roy F. Weston, Incorporated
100 Corporate North, Suite 101
Bannockburn, IL 60015

Attn: Mr. Carlos Serna

Date: Friday June 22nd, 1990

RE: RS03 20' Well
Project # 1989-06-01-0000
Lab ID: 9006G208-002
Sample Date: 06/11/90
Date Received: 06/12/90
Units: UG/L

Tentatively Identified Compounds

1 Volatile Compounds greater than 10% of the nearest internal standard were tentatively identified by mass spectral library search. This is exclusive of any target compounds, surrogates or internal standards.

Volatile Compound	Retention Time	Estimated Concentration
3-METHYLPENTANE	18.68	20 J

WESTON-GULF COAST LABORATORIES, INC.
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Phones: (708) 534-5200 (219) 885-7077 (815) 723-7533

ANALYTICAL REPORT

To: Tekalloy
Roy F. Weston, Incorporated
100 Corporate North, Suite 101
Bannockburn, IL 60015

Attn: Mr. Carlos Serna

Date: Friday June 22nd, 1990

RE: RS03 20' Well
Project # 1989-06-01-0000
Lab ID: 9006G208-002
Sample Date: 06/11/90
Date Received: 06/12/90
Units: UG/L

VOLATILES BY GC/MS, HSL LIST

Volatile Compound	Result	Detection Limit	Flag
1,2-Dichloropropane	BDL	5	U
cis-1,3-Dichloropropene	BDL	5	U
Trichloroethene	BDL	5	U
Dibromochloromethane	BDL	5	U
1,1,2-Trichloroethane	BDL	5	U
Benzene	BDL	5	U
Trans-1,3-Dichloropropene	BDL	5	U
Bromoform	BDL	5	U
4-Methyl-2-pentanone	BDL	10	U
2-Hexanone	BDL	10	U
Tetrachloroethene	BDL	5	U
1,1,2,2-Tetrachloroethane	BDL	5	U
Toluene	BDL	5	U
Chlorobenzene	BDL	5	U
Ethylbenzene	BDL	5	U
Styrene	BDL	5	U
Xylene (total)	BDL	5	U

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Date: Friday June 22nd, 1990

RE: RS03 20' Well
Project # 1989-06-01-0000
Lab ID: 9006G208-002
Sample Date: 06/11/90
Date Received: 06/12/90
Units: UG/L

VOLATILES BY GC/MS, HSL LIST

Volatile Compound	Result	Detection Limit	Flag
Chloromethane	BDL	10	U
Bromomethane	BDL	10	U
Vinyl Chloride	BDL	10	U
Chloroethane	BDL	10	U
Methylene Chloride	3	5	JB
Acetone	4	10	JB
Carbon Disulfide	BDL	5	U
1,1-Dichloroethene	BDL	5	U
1,1-Dichloroethane	BDL	5	U
1,2-Dichloroethene (total)	BDL	5	U
Chloroform	BDL	5	U
1,2-Dichloroethane	BDL	5	U
2-Butanone	BDL	10	U
1,1,1-Trichloroethane	BDL	5	U
Carbon Tetrachloride	BDL	5	U
Vinyl Acetate	BDL	10	U
Bromodichloromethane	BDL	5	U

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ANALYTICAL REPORT

To: **Tekalloy**
Roy F. Weston, Incorporated
100 Corporate North, Suite 101
Bannockburn, IL 60015

Attn: **Mr. Carlos Serna**

Date: Friday June 22nd, 1990

RE: **Trip Blank**
Project # 1989-06-01-0000
Lab ID: **9006G208-001**
Sample Date: 06/07/90
Date Received: 06/12/90
Units: UG/L

Tentatively Identified Compounds

1 Volatile Compounds greater than 10% of the nearest internal standard were tentatively identified by mass spectral library search. This is exclusive of any target compounds, surrogates or internal standards.

Volatile Compound	Retention Time	Estimated Concentration
3-METHYLPENTANE	18.68	20 J

WESTON
MANAGERS DESIGNERS/CONSULTANTS

WESTON-GULF COAST LABORATORIES, INC.
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ANALYTICAL REPORT

To: Tekalloy
Roy F. Weston, Incorporated
100 Corporate North, Suite 101
Bannockburn, IL 60015

Attn: **Mr. Carlos Serna**

Date: Friday June 22nd, 1990

RE: **Trip Blank**
Project # 1989-06-01-0000
Lab ID: 9006G208-001
Sample Date: 06/07/90
Date Received: 06/12/90
Units: UG/L

VOLATILES BY GC/MS, HSL LIST

Volatile Compound	Result	Detection Limit	Flag
1,2-Dichloropropane	BDL	5	U
cis-1,3-Dichloropropene	BDL	5	U
Trichloroethene	BDL	5	U
Dibromochloromethane	BDL	5	U
1,1,2-Trichloroethane	BDL	5	U
Benzene	BDL	5	U
Trans-1,3-Dichloropropene	BDL	5	U
Bromoform	BDL	5	U
4-Methyl-2-pentanone	BDL	10	U
2-Hexanone	BDL	10	U
Tetrachloroethene	BDL	5	U
1,1,2,2-Tetrachloroethane	BDL	5	U
Toluene	BDL	5	U
Chlorobenzene	BDL	5	U
Ethylbenzene	BDL	5	U
Styrene	BDL	5	U
Xylene (total)	BDL	5	U

WESTON
MANAGERS DESIGNERS/CONSULTANTS

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ANALYTICAL REPORT

To: **Tekalloy**
Roy F. Weston, Incorporated
100 Corporate North, Suite 101
Bannockburn, IL 60015

Attn: **Mr. Carlos Serna**

Date: Friday June 22nd, 1990

RE: **Trip Blank**
Project # 1989-06-01-0000
Lab ID: 9006G208-001
Sample Date: 06/07/90
Date Received: 06/12/90
Units: UG/L

VOLATILES BY GC/MS, HSL LIST

Volatile Compound	Result	Detection Limit	Flag
Chloromethane	BDL	10	U
Bromomethane	BDL	10	U
Vinyl Chloride	BDL	10	U
Chloroethane	BDL	10	U
Methylene Chloride	2	5	JB
Acetone	5	10	JB
Carbon Disulfide	BDL	5	U
1,1-Dichloroethene	BDL	5	U
1,1-Dichloroethane	BDL	5	U
1,2-Dichloroethene (total)	BDL	5	U
Chloroform	BDL	5	U
1,2-Dichloroethane	BDL	5	U
2-Butanone	BDL	10	U
1,1,1-Trichloroethane	BDL	5	U
Carbon T achloride	BDL	5	U
Vinyl Acetate	BDL	10	U
Bromodichloromethane	BDL	5	U

WESTON-GULF COAST LABORATORIES, INC.
2417 Bond St., University Park, Illinois 60466
Phones: (312) 534-5200 (219) 885-7077 (815) 723-7533

DATA QUALIFIERS

u - Indicates an inorganic compound was analyzed for but not detected.

U - Indicates an organic compound was analyzed for but not detected.

J - Indicates an estimated value for either a TIC or an analyte that meets the identification criteria but the result is less than the specified detection limit.

B - Indicates the compound was found in the blank and the sample.

T - Indicates the compound was found in the TCLP extraction blank and the sample.

E - Concentrations exceed calibration range of the instrument.

I - Indicates Interference.

BS - Indicates matrix analyses were conducted on reagent grade water.

BSD - Blank Spike Duplicate

BDL - Below Detection Limit

MS - Matrix Spike

MSD - Matrix Spike Duplicate

D - Indicates that surrogate/matrix spike recoveries were not obtained because the extract had to be diluted for analysis.

DL - Indicates a secondary dilution

NA - Not Applicable

DF - Dilution factor

X - Result is by calculation

NOTES:

Solid, sediment and sludge results are reported on a dry weight basis except when analyzed for Landfill disposal parameters (such as incineration or Illinois Green Sheet parameters). All other mg/kg results are reported on an "as received" basis.

Reporting limits are detection limits adjusted for sample size used, dilutions made, and in the case of dry weight results, the moisture content of the sample.

Revised 02/07/90

Custody Transfer Record/Lab Work Request

WESTON

WESTON Analytics Use Only
9006G208

Client TECHALLOY CO. INC.
Work Order
Date Rec'd. Date Due
RFW Contact
Client Contact/Phone LARRY WIDELL 923-2131

Refrigerator# 080	2L082									
#/Type Container	40ML.									
Containers/Volume	2-40ML.									
Preservative	NONE									
ANALYSES REQUESTED ➡										

WA Use Only Lab ID	Client ID/Description	Matrix	Date Collected										
002	RS04 25' WELL	W	6-11-90										

Matrix:
S - Soil
SE - Sediment
SO - Solid
W - Water
O - Oil
A - Air
DS - Drum Solids
DL - Drum Liquids
F - Fish
X - Other

Special Instructions:

Item/Reason	Relinquished by	Received by	Date	Time	Item/Reason	Relinquished by	Received by	Date	Time
		[illegible]	[illegible]	1155					

WESTON Analytics Use Only

Samples Were:
1 Shipped or Hand-Delivered
NOTES:
2 Ambient or Chilled
NOTES:
3 Received Broken/Leaking (Improperly Sealed)
Y N
NOTES:
4 Properly Preserved
Y N
NOTES:
5 Received Within Holding Times
Y N
NOTES:

COC Tape Was:
1 Present on Outer Package Y N
2 Unbroken on Outer Package Y N
3 Present on Sample Y N
4 Unbroken on Sample Y N
NOTES:

COC Record Was:
1 Present Upon Receipt of Samples Y N

Discrepancies Between Sample Labels and COC Record? Y N
NOTES:

RFW 21-2[illegible]A-5/88

7-115

Custody Transfer Record/Lab Work Request

WESTON

WESTON Analytics Use Only
90860-201

Client: TECHALLOY Co. INC.

Work Order:

Date Rec'd. _____ Date Due _____

RFW Contact:

Client Contact/Phone: LARRY WIDELL 923-2131

Refrigerator#	03G	CL08	2							
#/Type Container		2-40ML								
Containers/Volume		40ML.								
Preservative		NONE								
ANALYSES REQUESTED										

WA Use Only Lab ID	Client ID/Description	Matrix	Date Collected
002	K503 20' WELL	W	6-11-90

Matrix:
S - Soil
SE - Sediment
SO - Solid
W - Water
O - Oil
A - Air
DS - Drum Solids
DL - Drum Liquids
F - Fish
X - Other

Special Instructions:

Item/Reason	Relinquished by	Received by	Date	Time	Item/Reason	Relinquished by	Received by	Date	Time

WESTON Analytics Use Only

Samples Were:
1 Shipped or Hand-Delivered
NOTES:

2 Ambient or Chilled
NOTES:

3 Received Broken/Leaking (Improperly Sealed)
Y N
NOTES:

4 Properly Preserved
Y N
NOTES:

5 Received Within Holding Times
Y N
NOTES:

COC Tape Was:
1 Present on Outer Package Y N
2 Unbroken on Outer Package Y N
3 Present on Sample Y N
4 Unbroken on Sample Y N
NOTES:

COC Record Was:
1 Present Upon Receipt of Samples Y N

Discrepancies Between Sample Labels and COC Record? Y N
NOTES:

WESTON-GULF COAST LABORATORIES, INC.
2417 Bond St., University Park, Illinois 60466
Phones: (708) 534-5200 (219) 885-7077 (815) 723-7533

ANALYTICAL REPORT

To: Tekalloy
Roy F. Weston, Incorporated
100 Corporate North, Suite 101
Bannockburn, IL 60015

Attn: Mr. Carlos Serna

Date: Friday June 22nd, 1990

RE: RS-02
Project # 1989-06-01-0000
Lab ID: 9006G193-002
Sample Date: 06/08/90
Date Received: 06/09/90
Units: UG/L

Tentatively Identified Compounds

1 Volatile Compounds greater than 10% of the nearest internal standard were tentatively identified by mass spectral library search. This is exclusive of any target compounds, surrogates or internal standards.

Volatile Compound	Retention Time	Estimated Concentration
3-METHYLPENTANE	18.72	20 J

WESTON
MANAGERS DESIGNERS/CONSULTANTS

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ANALYTICAL REPORT

To: **Tekalloy**
Roy F. Weston, Incorporated
100 Corporate North, Suite 101
Bannockburn, IL 60015

Attn: **Mr. Carlos Serna**

Date: Friday June 22nd, 1990

RE: **RS-02**
Project # 1989-06-01-0000
Lab ID: **9006G193-002**
Sample Date: 06/08/90
Date Received: 06/09/90
Units: UG/L

VOLATILES BY GC/MS, HSL LIST

Volatile Compound	Result	Detection Limit	Flag
1,2-Dichloropropane	BDL	5	U
cis-1,3-Dichloropropene	BDL	5	U
Trichloroethene	BDL	5	U
Dibromochloromethane	BDL	5	U
1,1,2-Trichloroethane	BDL	5	U
Benzene	BDL	5	U
Trans-1,3-Dichloropropene	BDL	5	U
Bromoform	BDL	5	U
4-Methyl-2-pentanone	BDL	10	U
2-Hexanone	BDL	10	U
Tetrachloroethene	BDL	5	U
1,1,2,2-Tetrachloroethane	BDL	5	U
Toluene	BDL	5	U
Chlorobenzene	BDL	5	U
Ethylbenzene	BDL	5	U
Styrene	BDL	5	U
Xylene (total)	BDL	5	U

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Attn: Mr. Carlos Serna

Date: Friday June 22nd, 1990

RE: RS-02
Project # 1989-06-01-0000
Lab ID: 9006G193-002
Sample Date: 06/08/90
Date Received: 06/09/90
Units: UG/L

VOLATILES BY GC/MS, HSL LIST

Volatile Compound	Result	Detection Limit	Flag
Chloromethane	BDL	10	U
Bromomethane	BDL	10	U
Vinyl Chloride	BDL	10	U
Chloroethane	BDL	10	U
Methylene Chloride	3	5	JB
Acetone	5	10	JB
Carbon Disulfide	BDL	5	U
1,1-Dichloroethene	BDL	5	U
1,1-Dichloroethane	BDL	5	U
1,2-Dichloroethene (total)	BDL	5	U
Chloroform	BDL	5	U
1,2-Dichloroethane	BDL	5	U
2-Butanone	BDL	10	U
1,1,1-Trichloroethane	BDL	5	U
Carbon Tetrachloride	BDL	5	U
Vinyl Acetate	BDL	10	U
Bromodichloromethane	BDL	5	U

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ANALYTICAL REPORT

To: Tekalloy
Roy F. Weston, Incorporated
100 Corporate North, Suite 101
Bannockburn, IL 60015

Attn: Mr. Carlos Serna

Date: Friday June 22nd, 1990

RE: Trip Blank
Project # 1989-06-01-0000
Lab ID: 9006G193-001
Sample Date: 06/07/90
Date Received: 06/09/90
Units: UG/L

Tentatively Identified Compounds

No Volatile Compounds greater than 10% of the nearest internal standard were tentatively identified by mass spectral library search. This is exclusive of any target compounds, surrogates or internal standards.

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To: Tekalloy
Roy F. Weston, Incorporated
100 Corporate North, Suite 101
Bannockburn, IL 60015

Attn: Mr. Carlos Serna

Date: Friday June 22nd, 1990

RE: Trip Blank
Project # 1989-06-01-0000
Lab ID: 9006G193-001
Sample Date: 06/07/90
Date Received: 06/09/90
Units: UG/L

VOLATILES BY GC/MS, HSL LIST

Volatile Compound	Result	Detection Limit	Flag
1,2-Dichloropropane	BDL	5	U
cis-1,3-Dichloropropene	BDL	5	U
Trichloroethene	BDL	5	U
Dibromochloromethane	BDL	5	U
1,1,2-Trichloroethane	BDL	5	U
Benzene	BDL	5	U
Trans-1,3-Dichloropropene	BDL	5	U
Bromoform	BDL	5	U
4-Methyl-2-pentanone	BDL	10	U
2-Hexanone	BDL	10	U
Tetrachloroethene	BDL	5	U
1,1,2,2-Tetrachloroethane	BDL	5	U
Toluene	BDL	5	U
Chlorobenzene	BDL	5	U
Ethylbenzene	BDL	5	U
Styrene	BDL	5	U
Xylene (total)	BDL	5	U

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Attn: Mr. Carlos Serna

Date: Friday June 22nd, 1990

RE: Trip Blank
Project # 1989-06-01-0000
Lab ID: 9006G193-001
Sample Date: 06/07/90
Date Received: 06/09/90
Units: UG/L

VOLATILES BY GC/MS, HSL LIST

Volatile Compound	Result	Detection Limit	Flag
Chloromethane	BDL	10	U
Bromomethane	BDL	10	U
Vinyl Chloride	BDL	10	U
Chloroethane	BDL	10	U
Methylene Chloride	1	5	JB
Acetone	5	10	JB
Carbon Disulfide	BDL	5	U
1,1-Dichloroethene	BDL	5	U
1,1-Dichloroethane	BDL	5	U
1,2-Dichloroethene (total)	BDL	5	U
Chloroform	BDL	5	U
1,2-Dichloroethane	BDL	5	U
2-Butanone	BDL	10	U
1,1,1-Trichloroethane	BDL	5	U
Carbon Tetrachloride	BDL	5	U
Vinyl Acetate	BDL	10	U
Bromodichloromethane	BDL	5	U

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ANALYTICAL REPORT

To: Techalloy
Roy F. Weston, Incorporated
3 Hawthorn Parkway, Suite 400
Vernon Hills, IL 60061

Attn: Mr. Jack Thorsen

Date: Wednesday December 19th, 1990

RE: Non-responsive
Project # 1986-06-01-0000
Lab ID: 9012G133-004
Sample Date: 12/12/90
Date Received: 12/12/90
Units: UG/L

VOLATILES BY GC/MS, METHOD 524 LIST

Volatile Compound	Result	Reporting Limit	Flag
1,2-Dichlorobenzene	BDL	0.3	U
n-Butylbenzene	BDL	0.3	U
1,2-Dibromo-3-Chloropropane	BDL	0.6	U
1,2,4-Trichlorobenzene	BDL	0.5	U
Hexachlorobutadiene	BDL	0.5	U
Naphthalene	BDL	0.4	U
1,2,3-Trichlorobenzene	BDL	0.7	U
cis-1,3-Dichloropropene	BDL	0.2	U
trans-1,3-Dichloropropene	BDL	0.2	U

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MANAGERS DESIGNERS/CONSULTANTS

ANALYTICAL REPORT

To: Techalloy
Roy F. Weston, Incorporated
3 Hawthorn Parkway, Suite 400
Vernon Hills, IL 60061

Attn: Mr. Jack Thorsen

Date: Wednesday December 19th, 1990

RE: Non-responsive
Project # 1986-06-01-0000
Lab ID: 9012G133-004
Sample Date: 12/12/90
Date Received: 12/12/90
Units: UG/L

Tentatively Identified Compounds

No Volatile Compounds greater than 10% of the nearest internal standard were tentatively identified by mass spectral library search. This is exclusive of any target compounds, surrogates or internal standards.

WESTON-GULF COAST LABORATORIES, INC.
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To: Techalloy
Roy F. Weston, Incorporated
3 Hawthorn Parkway, Suite 400
Vernon Hills, IL 60061

Attn: Mr. Jack Thorsen

Date: Wednesday December 19th, 1990

Non-responsive

Project # 1988-06-01-0000
Lab ID: 9012G133-004
Sample Date: 12/12/90
Date Received: 12/12/90
Units: UG/L

VOLATILES BY GC/MS, METHOD 524 LIST

Volatile Compound	Result	Reporting Limit	Flag
1,1-Dichloropropene	BDL	0.2	U
Bromodichloromethane	BDL	0.2	U
Dibromomethane	BDL	0.4	U
1,2-Dichloropropane	BDL	0.9	U
Trichloroethene	BDL	0.6	U
Dibromochloromethane	BDL	0.2	U
1,2-Dibromoethane	BDL	0.2	U
1,1,2-Trichloroethane	BDL	0.2	U
Benzene	BDL	0.2	U
1,3-Dichloropropane	BDL	0.2	U
Bromoform	BDL	0.3	U
Tetrachloroethene	BDL	0.1	U
1,1,2,2-Tetrachloroethane	BDL	0.4	U
Toluene	BDL	0.2	U
Chlorobenzene	BDL	0.2	U
1,1,1,2-Tetrachlorethane	BDL	0.2	U
Ethylbenzene	BDL	0.2	U

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Attn: Mr. Jack Thorsen

Date: Wednesday December 19th, 1990

Non-responsive

Project # 1986-06-01-0000
Lab ID: 9012G133-004
Sample Date: 12/12/90
Date Received: 12/12/90
Units: UG/L

VOLATILES BY GC/MS, METHOD 524 LIST

Volatile Compound	Result	Reporting Limit	Flag
Styrene	BDL	0.8	U
p-Xylene	BDL	0.2	U
m-Xylene	BDL	0.2	U
o-Xylene	BDL	0.4	U
Bromobenzene	BDL	0.3	U
1,2,3-Trichloropropane	BDL	0.4	U
Isopropylbenzene	BDL	0.3	U
n-Propylbenzene	BDL	0.3	U
2-Chlorotoluene	BDL	0.3	U
4-Chlorotoluene	BDL	0.3	U
1,3,5-Trimethylbenzene	BDL	0.3	U
tert-Butylbenzene	BDL	0.3	U
1,2,4-Trimethylbenzene	BDL	0.3	U
sec-Butylbenzene	BDL	0.3	U
p-Isopropyltoluene	BDL	0.3	U
1,3-Dichlorobenzene	BDL	0.3	U
1,4-Dichlorobenzene	BDL	0.3	U

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Attn: Mr. Jack Thorsen

Date: Wednesday December 19th, 1990

RE: Non-responsive
Project # 1986-06-01-0000
Lab ID: 9012G133-003
Sample Date: 12/12/90
Date Received: 12/12/90
Units: UG/L

Tentatively Identified Compounds

No Volatile Compounds greater than 10% of the nearest internal standard were tentatively identified by mass spectral library search. This is exclusive of any target compounds, surrogates or internal standards.

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Attn: Mr. Jack Thorsen

Date: Wednesday December 19th, 1990

RE: Non-responsive
Project # 1986-06-01-0000
Lab ID: 9012G133-004
Sample Date: 12/12/90
Date Received: 12/12/90
Units: UG/L

VOLATILES BY GC/MS, METHOD 524 LIST

Volatile Compound	Result	Reporting Limit	Flag
Dichlorodifluoromethane	BDL	0.2	U
Chloromethane	BDL	0.2	U
Bromomethane	BDL	0.1	U
Vinyl Chloride	BDL	0.2	U
Chloroethane	BDL	0.1	U
Methylene Chloride	BDL	0.8	U
Trichlorofluoromethane	BDL	0.5	U
1,1-Dichloroethene	BDL	0.2	U
1,1-Dichloroethane	BDL	0.3	U
cis-1,2-Dichloroethene	BDL	0.3	U
2,2-Dichloropropane	BDL	0.3	U
trans-1,2-Dichloroethene	BDL	0.2	U
Chloroform	BDL	0.3	U
Bromochloromethane	BDL	0.3	U
1,2-Dichloroethane	BDL	0.3	U
1,1,1-Trichloroethane	BDL	0.2	U
Carbon Tetrachloride	BDL	0.1	U

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Attn: Mr. Jack Thorsen

Date: Wednesday December 19th, 1990

RE: Non-responsive
Project # 1986-06-01-0000
Lab ID: 9012G133-003
Sample Date: 12/12/90
Date Received: 12/12/90
Units: UG/L

VOLATILES BY GC/MS, METHOD 524 LIST

Volatile Compound	Result	Reporting Limit	Flag
Styrene	BDL	0.8	U
p-Xylene	BDL	0.2	U
m-Xylene	BDL	0.2	U
o-Xylene	BDL	0.4	U
Bromobenzene	BDL	0.3	U
1,2,3-Trichloropropane	BDL	0.4	U
Isopropylbenzene	BDL	0.3	U
n-Propylbenzene	BDL	0.3	U
2-Chlorotoluene	BDL	0.3	U
4-Chlorotoluene	BDL	0.3	U
1,3,5-Trimethylbenzene	BDL	0.3	U
tert-Butylbenzene	BDL	0.3	U
1,2,4-Trimethylbenzene	BDL	0.3	U
sec-Butylbenzene	BDL	0.3	U
p-Isopropyltoluene	BDL	0.3	U
1,3-Dichlorobenzene	BDL	0.3	U
1,4-Dichlorobenzene	BDL	0.3	U

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Date: Wednesday December 19th, 1990

RE: Non-responsive
Project # 1986-06-01-0000
Lab ID: 9012G133-003
Sample Date: 12/12/90
Date Received: 12/12/90
Units: UG/L

VOLATILES BY GC/MS, METHOD 524 LIST

Volatile Compound	Result	Reporting Limit	Flag
1,2-Dichlorobenzene	BDL	0.3	U
n-Butylbenzene	BDL	0.3	U
1,2-Dibromo-3-Chloropropane	BDL	0.6	U
1,2,4-Trichlorobenzene	BDL	0.5	U
Hexachlorobutadiene	BDL	0.5	U
Naphthalene	BDL	0.4	U
1,2,3-Trichlorobenzene	BDL	0.7	U
cis-1,3-Dichloropropene	BDL	0.2	U
trans-1,3-Dichloropropene	BDL	0.2	U

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ANALYTICAL REPORT

To: **Techalloy**
Roy F. Weston, Incorporated
3 Hawthorn Parkway, Suite 400
Vernon Hills, IL 60061

Attn: **Mr. Jack Thorsen**

Date: Wednesday December 19th, 1990

RE: [redacted]
Project # 1986-06-01-0000
Lab ID: **9012G133-003**
Sample Date: 12/12/90
Date Received: 12/12/90
Units: UG/L

VOLATILES BY GC/MS, METHOD 524 LIST

Volatile Compound	Result	Reporting Limit	Flag
Dichlorodifluoromethane	BDL	0.2	U
Chloromethane	BDL	0.2	U
Bromomethane	BDL	0.1	U
Vinyl Chloride	BDL	0.2	U
Chloroethane	BDL	0.1	U
Methylene Chloride	BDL	0.8	U
Trichlorofluoromethane	BDL	0.5	U
1,1-Dichloroethene	BDL	0.2	U
1,1-Dichloroethane	BDL	0.3	U
cis-1,2-Dichloroethene	BDL	0.3	U
2,2-Dichloropropane	BDL	0.3	U
trans-1,2-Dichloroethene	BDL	0.2	U
Chloroform	BDL	0.3	U
Bromochloromethane	BDL	0.3	U
1,2-Dichloroethane	BDL	0.3	U
1,1,1-Trichloroethane	9	0.2	
Carbon Tetrachloride	BDL	0.1	U

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Date: Wednesday December 19th, 1990

RE: Non-responsive
Project # 1986-06-01-0000
Lab ID: 9012G133-003
Sample Date: 12/12/90
Date Received: 12/12/90
Units: UG/L

VOLATILES BY GC/MS, METHOD 524 LIST

Volatile Compound	Result	Reporting Limit	Flag
1,1-Dichloropropene	BDL	0.2	U
Bromodichloromethane	BDL	0.2	U
Dibromomethane	BDL	0.4	U
1,2-Dichloropropane	BDL	0.9	U
Trichloroethene	BDL	0.6	U
Dibromochloromethane	BDL	0.2	U
1,2-Dibromoethane	BDL	0.2	U
1,1,2-Trichloroethane	BDL	0.2	U
Benzene	BDL	0.2	U
1,3-Dichloropropane	BDL	0.2	U
Bromoform	BDL	0.3	U
Tetrachloroethene	BDL	0.1	U
1,1,2,2-Tetrachloroethane	BDL	0.4	U
Toluene	BDL	0.2	U
Chlorobenzene	BDL	0.2	U
1,1,1,2-Tetrachlorethane	BDL	0.2	U
Ethylbenzene	BDL	0.2	U

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ANALYTICAL REPORT

To: Techalloy
Roy F. Weston, Incorporated
3 Hawthorn Parkway, Suite 400
Vernon Hills, IL 60061

Attn: Mr. Jack Thorsen

Date: Wednesday December 19th, 1990

RE: 01FB
Project # 1986-06-01-0000
Lab ID: 9012G133-002
Sample Date: 12/12/90
Date Received: 12/12/90
Units: UG/L

VOLATILES BY GC/MS, METHOD 524 LIST

Volatile Compound	Result	Reporting Limit	Flag
1,2-Dichlorobenzene	BDL	0.3	U
n-Butylbenzene	BDL	0.3	U
1,2-Dibromo-3-Chloropropane	BDL	0.6	U
1,2,4-Trichlorobenzene	BDL	0.5	U
Hexachlorobutadiene	BDL	0.5	U
Naphthalene	BDL	0.4	U
1,2,3-Trichlorobenzene	BDL	0.7	U
cis-1,3-Dichloropropene	BDL	0.2	U
trans-1,3-Dichloropropene	BDL	0.2	U

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ANALYTICAL REPORT

To: **Techalloy**
Roy F. Weston, Incorporated
3 Hawthorn Parkway, Suite 400
Vernon Hills, IL 60061

Attn: **Mr. Jack Thorsen**

Date: Wednesday December 19th, 1990

RE: **01FB**
Project # 1986-06-01-0000
Lab ID: **9012G133-002**
Sample Date: 12/12/90
Date Received: 12/12/90
Units: UG/L

Tentatively Identified Compounds

No Volatile Compounds greater than 10% of the nearest internal standard were tentatively identified by mass spectral library search. This is exclusive of any target compounds, surrogates or internal standards.

WESTON
MANAGERS DESIGNERS/CONSULTANTS

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Date: Wednesday December 19th, 1990

RE: **01FB**
Project # 1986-06-01-0000
Lab ID: **9012G133-002**
Sample Date: 12/12/90
Date Received: 12/12/90
Units: UG/L

VOLATILES BY GC/MS, METHOD 524 LIST

Volatile Compound	Result	Reporting Limit	Flag
1,1-Dichloropropene	BDL	0.2	U
Bromodichloromethane	BDL	0.2	U
Dibromomethane	BDL	0.4	U
1,2-Dichloropropane	BDL	0.9	U
Trichloroethene	BDL	0.6	U
Dibromochloromethane	BDL	0.2	U
1,2-Dibromoethane	BDL	0.2	U
1,1,2-Trichloroethane	BDL	0.2	U
Benzene	BDL	0.2	U
1,3-Dichloropropane	BDL	0.2	U
Bromoform	BDL	0.3	U
Tetrachloroethene	BDL	0.1	U
1,1,2,2-Tetrachloroethane	BDL	0.4	U
Toluene	BDL	0.2	U
Chlorobenzene	BDL	0.2	U
1,1,1,2-Tetrachlorethane	BDL	0.2	U
Ethylbenzene	BDL	0.2	U

WESTON-GULF COAST LABORATORIES, INC.
2417 Bond St., University Park, Illinois 60466
Phones: (708) 534-5200 (219) 885-7077 (815) 723-7533

ANALYTICAL REPORT

To: Techalloy
Roy F. Weston, Incorporated
3 Hawthorn Parkway, Suite 400
Vernon Hills, IL 60061

Attn: Mr. Jack Thorsen

Date: Wednesday December 19th, 1990

RE: 01FB
Project # 1986-06-01-0000
Lab ID: 9012G133-002
Sample Date: 12/12/90
Date Received: 12/12/90
Units: UG/L

VOLATILES BY GC/MS, METHOD 524 LIST

Volatile Compound	Result	Reporting Limit	Flag
Styrene	BDL	0.8	U
p-Xylene	BDL	0.2	U
m-Xylene	BDL	0.2	U
o-Xylene	BDL	0.4	U
Bromobenzene	BDL	0.3	U
1,2,3-Trichloropropane	BDL	0.4	U
Isopropylbenzene	BDL	0.3	U
n-Propylbenzene	BDL	0.3	U
2-Chlorotoluene	BDL	0.3	U
4-Chlorotoluene	BDL	0.3	U
1,3,5-Trimethylbenzene	BDL	0.3	U
tert-Butylbenzene	BDL	0.3	U
1,2,4-Trimethylbenzene	BDL	0.3	U
sec-Butylbenzene	BDL	0.3	U
p-Isopropyltoluene	BDL	0.3	U
1,3-Dichlorobenzene	BDL	0.3	U
1,4-Dichlorobenzene	BDL	0.3	U

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ANALYTICAL REPORT

To: **Techalloy**
Roy F. Weston, Incorporated
3 Hawthorn Parkway, Suite 400
Vernon Hills, IL 60061

Attn: **Mr. Jack Thorsen**

Date: Wednesday December 19th, 1990

RE: **01TB**
Project # 1986-06-01-0000
Lab ID: **9012G133-001**
Sample Date: 12/12/90
Date Received: 12/12/90
Units: UG/L

Tentatively Identified Compounds

No Volatile Compounds greater than 10% of the nearest internal standard were tentatively identified by mass spectral library search. This is exclusive of any target compounds, surrogates or internal standards.

WESTON-GULF COAST LABORATORIES, INC.
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ANALYTICAL REPORT

To: Techalloy
Roy F. Weston, Incorporated
3 Hawthorn Parkway, Suite 400
Vernon Hills, IL 60061

Attn: Mr. Jack Thorsen

Date: Wednesday December 19th, 1990

RE: 01FB
Project # 1986-06-01-0000
Lab ID: 9012G133-002
Sample Date: 12/12/90
Date Received: 12/12/90
Units: UG/L

VOLATILES BY GC/MS, METHOD 524 LIST

Volatile Compound	Result	Reporting Limit	Flag
Dichlorodifluoromethane	BDL	0.2	U
Chloromethane	BDL	0.2	U
Bromomethane	BDL	0.1	U
Vinyl Chloride	BDL	0.2	U
Chloroethane	BDL	0.1	U
Methylene Chloride	BDL	0.8	U
Trichlorofluoromethane	BDL	0.5	U
1,1-Dichloroethene	BDL	0.2	U
1,1-Dichloroethane	BDL	0.3	U
cis-1,2-Dichloroethene	BDL	0.3	U
2,2-Dichloropropane	BDL	0.3	U
trans-1,2-Dichloroethene	BDL	0.2	U
Chloroform	BDL	0.3	U
Bromochloromethane	BDL	0.3	U
1,2-Dichloroethane	BDL	0.3	U
1,1,1-Trichloroethane	BDL	0.2	U
Carbon Tetrachloride	BDL	0.1	U

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Attn: Mr. Jack Thorsen

Date: Wednesday December 19th, 1990

RE: 01TB
Project # 1986-06-01-0000
Lab ID: 9012G133-001
Sample Date: 12/12/90
Date Received: 12/12/90
Units: UG/L

VOLATILES BY GC/MS, METHOD 524 LIST

Volatile Compound	Result	Reporting Limit	Flag
Styrene	BDL	0.8	U
p-Xylene	BDL	0.2	U
m-Xylene	BDL	0.2	U
o-Xylene	BDL	0.4	U
Bromobenzene	BDL	0.3	U
1,2,3-Trichloropropane	BDL	0.4	U
Isopropylbenzene	BDL	0.3	U
n-Propylbenzene	BDL	0.3	U
2-Chlorotoluene	BDL	0.3	U
4-Chlorotoluene	BDL	0.3	U
1,3,5-Trimethylbenzene	BDL	0.3	U
tert-Butylbenzene	BDL	0.3	U
1,2,4-Trimethylbenzene	BDL	0.3	U
sec-Butylbenzene	BDL	0.3	U
p-Isopropyltoluene	BDL	0.3	U
1,3-Dichlorobenzene	BDL	0.3	U
1,4-Dichlorobenzene	BDL	0.3	U

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Date: Wednesday December 19th, 1990

RE: 01TB
Project # 1986-06-01-0000
Lab ID: 9012G133-001
Sample Date: 12/12/90
Date Received: 12/12/90
Units: UG/L

VOLATILES BY GC/MS, METHOD 524 LIST

Volatile Compound	Result	Reporting Limit	Flag
1,2-Dichlorobenzene	BDL	0.3	U
n-Butylbenzene	BDL	0.3	U
1,2-Dibromo-3-Chloropropane	BDL	0.6	U
1,2,4-Trichlorobenzene	BDL	0.5	U
Hexachlorobutadiene	BDL	0.5	U
Naphthalene	BDL	0.4	U
1,2,3-Trichlorobenzene	BDL	0.7	U
cis-1,3-Dichloropropene	BDL	0.2	U
trans-1,3-Dichloropropene	BDL	0.2	U

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RE: 01TB
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Lab ID: 9012G133-001
Sample Date: 12/12/90
Date Received: 12/12/90
Units: UG/L

VOLATILES BY GC/MS, METHOD 524 LIST

Volatile Compound	Result	Reporting Limit	Flag
Dichlorodifluoromethane	BDL	0.2	U
Chloromethane	BDL	0.2	U
Bromomethane	BDL	0.1	U
Vinyl Chloride	BDL	0.2	U
Chloroethane	BDL	0.1	U
Methylene Chloride	BDL	0.8	U
Trichlorofluoromethane	BDL	0.5	U
1,1-Dichloroethene	BDL	0.2	U
1,1-Dichloroethane	BDL	0.3	U
cis-1,2-Dichloroethene	BDL	0.3	U
2,2-Dichloropropane	BDL	0.3	U
trans-1,2-Dichloroethene	BDL	0.2	U
Chloroform	BDL	0.3	U
Bromochloromethane	BDL	0.3	U
1,2-Dichloroethane	BDL	0.3	U
1,1,1-Trichloroethane	BDL	0.2	U
Carbon Tetrachloride	BDL	0.1	U

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Lab ID: 9012G133-001
Sample Date: 12/12/90
Date Received: 12/12/90
Units: UG/L

VOLATILES BY GC/MS, METHOD 524 LIST

Volatile Compound	Result	Reporting Limit	Flag
1,1-Dichloropropene	BDL	0.2	U
Bromodichloromethane	BDL	0.2	U
Dibromomethane	BDL	0.4	U
1,2-Dichloropropane	BDL	0.9	U
Trichloroethene	BDL	0.6	U
Dibromochloromethane	BDL	0.2	U
1,2-Dibromoethane	BDL	0.2	U
1,1,2-Trichloroethane	BDL	0.2	U
Benzene	BDL	0.2	U
1,3-Dichloropropane	BDL	0.2	U
Bromoform	BDL	0.3	U
Tetrachloroethene	BDL	0.1	U
1,1,2,2-Tetrachloroethane	BDL	0.4	U
Toluene	BDL	0.2	U
Chlorobenzene	BDL	0.2	U
1,1,1,2-Tetrachlorethane	BDL	0.2	U
Ethylbenzene	BDL	0.2	U

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To: Techalloy
Roy F. Weston, Incorporated
3 Hawthorn Parkway, Suite 400
Vernon Hills, IL 60061

Attn: Mr. Jack Thorsen

Date: Wednesday December 19th, 1990

RE: Non-responsive
Project # 1986-06-01-0000
Lab ID: 9012G133-005
Sample Date: 12/12/90
Date Received: 12/12/90
Units: UG/L

VOLATILES BY GC/MS, METHOD 524 LIST

Volatile Compound	Result	Reporting Limit	Flag
1,1-Dichloropropene	BDL	0.2	U
Bromodichloromethane	BDL	0.2	U
Dibromomethane	BDL	0.4	U
1,2-Dichloropropane	BDL	0.9	U
Trichloroethene	BDL	0.6	U
Dibromochloromethane	BDL	0.2	U
1,2-Dibromoethane	BDL	0.2	U
1,1,2-Trichloroethane	BDL	0.2	U
Benzene	BDL	0.2	U
1,3-Dichloropropane	BDL	0.2	U
Bromoform	BDL	0.3	U
Tetrachloroethene	BDL	0.1	U
1,1,2,2-Tetrachloroethane	BDL	0.4	U
Toluene	BDL	0.2	U
Chlorobenzene	BDL	0.2	U
1,1,1,2-Tetrachlorethane	BDL	0.2	U
Ethylbenzene	BDL	0.2	U

WESTON
MANAGERS DESIGNERS/CONSULTANTS

WESTON-GULF COAST LABORATORIES, INC.
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Roy F. Weston, Incorporated
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Vernon Hills, IL 60061

Attn: Mr. Jack Thorsen

Date: Wednesday December 19th, 1990

RE: Non-responsive
Project # 1986-06-01-0000
Lab ID: 9012G133-005
Sample Date: 12/12/90
Date Received: 12/12/90
Units: UG/L

VOLATILES BY GC/MS, METHOD 524 LIST

Volatile Compound	Result	Reporting Limit	Flag
Dichlorodifluoromethane	BDL	0.2	U
Chloromethane	BDL	0.2	U
Bromomethane	BDL	0.1	U
Vinyl Chloride	BDL	0.2	U
Chloroethane	BDL	0.1	U
Methylene Chloride	BDL	0.8	U
Trichlorofluoromethane	BDL	0.5	U
1,1-Dichloroethene	BDL	0.2	U
1,1-Dichloroethane	BDL	0.3	U
cis-1,2-Dichloroethene	BDL	0.3	U
2,2-Dichloropropane	BDL	0.3	U
trans-1,2-Dichloroethene	BDL	0.2	U
Chloroform	BDL	0.3	U
Bromochloromethane	BDL	0.3	U
1,2-Dichloroethane	BDL	0.3	U
1,1,1-Trichloroethane	BDL	0.2	U
Carbon Tetrachloride	BDL	0.1	U

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Date: Wednesday December 19th, 1990

RE: Non-responsive
Project # 1986-06-01-0000
Lab ID: 9012G133-005
Sample Date: 12/12/90
Date Received: 12/12/90
Units: UG/L

VOLATILES BY GC/MS, METHOD 524 LIST

Volatile Compound	Result	Reporting Limit	Flag
1,2-Dichlorobenzene	BDL	0.3	U
n-Butylbenzene	BDL	0.3	U
1,2-Dibromo-3-Chloropropane	BDL	0.6	U
1,2,4-Trichlorobenzene	BDL	0.5	U
Hexachlorobutadiene	BDL	0.5	U
Naphthalene	BDL	0.4	U
1,2,3-Trichlorobenzene	BDL	0.7	U
cis-1,3-Dichloropropene	BDL	0.2	U
trans-1,3-Dichloropropene	BDL	0.2	U

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Project # 1986-06-01-0000
Lab ID: 9012G133-005
Sample Date: 12/12/90
Date Received: 12/12/90
Units: UG/L

VOLATILES BY GC/MS, METHOD 524 LIST

Volatile Compound	Result	Reporting Limit	Flag
Styrene	BDL	0.8	U
p-Xylene	BDL	0.2	U
m-Xylene	BDL	0.2	U
o-Xylene	BDL	0.4	U
Bromobenzene	BDL	0.3	U
1,2,3-Trichloropropane	BDL	0.4	U
Isopropylbenzene	BDL	0.3	U
n-Propylbenzene	BDL	0.3	U
2-Chlorotoluene	BDL	0.3	U
4-Chlorotoluene	BDL	0.3	U
1,3,5-Trimethylbenzene	BDL	0.3	U
tert-Butylbenzene	BDL	0.3	U
1,2,4-Trimethylbenzene	BDL	0.3	U
sec-Butylbenzene	BDL	0.3	U
p-Isopropyltoluene	BDL	0.3	U
1,3-Dichlorobenzene	BDL	0.3	U
1,4-Dichlorobenzene	BDL	0.3	U

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To: Techalloy
Roy F. Weston, Incorporated
3 Hawthorn Parkway, Suite 400
Vernon Hills, IL 60061

Attn: Mr. Jack Thorsen

Date: Wednesday December 19th, 1990

RE: Non-responsive
Project # 1986-06-01-0000
Lab ID: 9012G133-006
Sample Date: 12/12/90
Date Received: 12/12/90
Units: UG/L

VOLATILES BY GC/MS, METHOD 524 LIST

Volatile Compound	Result	Reporting Limit	Flag
Dichlorodifluoromethane	BDL	0.2	U
Chloromethane	BDL	0.2	U
Bromomethane	BDL	0.1	U
Vinyl Chloride	BDL	0.2	U
Chloroethane	BDL	0.1	U
Methylene Chloride	BDL	0.8	U
Trichlorofluoromethane	BDL	0.5	U
1,1-Dichloroethene	BDL	0.2	U
1,1-Dichloroethane	BDL	0.3	U
cis-1,2-Dichloroethene	BDL	0.3	U
2,2-Dichloropropane	BDL	0.3	U
trans-1,2-Dichloroethene	BDL	0.2	U
Chloroform	1	0.3	
Bromochloromethane	BDL	0.3	U
1,2-Dichloroethane	BDL	0.3	U
1,1,1-Trichloroethane	4	0.2	
Carbon Tetrachloride	2	0.1	

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Attn: Mr. Jack Thorsen

Date: Wednesday December 19th, 1990

RE: Non-responsive
Project # 1986-06-01-0000
Lab ID: 9012G133-005
Sample Date: 12/12/90
Date Received: 12/12/90
Units: UG/L

Tentatively Identified Compounds

No Volatile Compounds greater than 10% of the nearest internal standard were tentatively identified by mass spectral library search. This is exclusive of any target compounds, surrogates or internal standards.

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Date: Wednesday December 19th, 1990

RE: Non-responsive
Project # 1986-06-01-0000
Lab ID: 9012G133-006
Sample Date: 12/12/90
Date Received: 12/12/90
Units: UG/L

VOLATILES BY GC/MS, METHOD 524 LIST

Volatile Compound	Result	Reporting Limit	Flag
Styrene	BDL	0.8	U
p-Xylene	BDL	0.2	U
m-Xylene	BDL	0.2	U
o-Xylene	BDL	0.4	U
Bromobenzene	BDL	0.3	U
1,2,3-Trichloropropane	BDL	0.4	U
Isopropylbenzene	BDL	0.3	U
n-Propylbenzene	BDL	0.3	U
2-Chlorotoluene	BDL	0.3	U
4-Chlorotoluene	BDL	0.3	U
1,3,5-Trimethylbenzene	BDL	0.3	U
tert-Butylbenzene	BDL	0.3	U
1,2,4-Trimethylbenzene	BDL	0.3	U
sec-Butylbenzene	BDL	0.3	U
p-Isopropyltoluene	BDL	0.3	U
1,3-Dichlorobenzene	BDL	0.3	U
1,4-Dichlorobenzene	BDL	0.3	U

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Attn: Mr. Jack Thorsen

Date: Wednesday December 19th, 1990

RE: Non-responsive
Project # 1986-06-01-0000
Lab ID: 9012G133-006
Sample Date: 12/12/90
Date Received: 12/12/90
Units: UG/L

VOLATILES BY GC/MS, METHOD 524 LIST

Volatile Compound	Result	Reporting Limit	Flag
1,1-Dichloropropene	BDL	0.2	U
Bromodichloromethane	BDL	0.2	U
Dibromomethane	BDL	0.4	U
1,2-Dichloropropane	BDL	0.9	U
Trichloroethene	BDL	0.6	U
Dibromochloromethane	BDL	0.2	U
1,2-Dibromoethane	BDL	0.2	U
1,1,2-Trichloroethane	BDL	0.2	U
Benzene	BDL	0.2	U
1,3-Dichloropropane	BDL	0.2	U
Bromoform	BDL	0.3	U
Tetrachloroethene	4	0.1	
1,1,2,2-Tetrachloroethane	BDL	0.4	U
Toluene	BDL	0.2	U
Chlorobenzene	BDL	0.2	U
1,1,1,2-Tetrachlorethane	BDL	0.2	U
Ethylbenzene	BDL	0.2	U

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Date: Wednesday December 19th, 1990

RE: Non-responsive
Project # 1986-06-01-0000
Lab ID: 9012G133-006
Sample Date: 12/12/90
Date Received: 12/12/90
Units: UG/L

Tentatively Identified Compounds

No Volatile Compounds greater than 10% of the nearest internal standard were tentatively identified by mass spectral library search. This is exclusive of any target compounds, surrogates or internal standards.

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Lab ID: 9012G133-006
Sample Date: 12/12/90
Date Received: 12/12/90
Units: UG/L

VOLATILES BY GC/MS, METHOD 524 LIST

Volatile Compound	Result	Reporting Limit	Flag
1,2-Dichlorobenzene	BDL	0.3	U
n-Butylbenzene	BDL	0.3	U
1,2-Dibromo-3-Chloropropane	BDL	0.6	U
1,2,4-Trichlorobenzene	BDL	0.5	U
Hexachlorobutadiene	BDL	0.5	U
Naphthalene	BDL	0.4	U
1,2,3-Trichlorobenzene	BDL	0.7	U
cis-1,3-Dichloropropene	BDL	0.2	U
trans-1,3-Dichloropropene	BDL	0.2	U

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Vernon Hills, IL 60061

Attn: Mr. Jack Thorsen

Date: Wednesday December 19th, 1990

RE: Non-responsive
Project # 1986-06-01-0000
Lab ID: 9012G133-007
Sample Date: 12/12/90
Date Received: 12/12/90
Units: UG/L

VOLATILES BY GC/MS, METHOD 524 LIST

Volatile Compound	Result	Reporting Limit	Flag
1,1-Dichloropropene	BDL	0.2	U
Bromodichloromethane	BDL	0.2	U
Dibromomethane	BDL	0.4	U
1,2-Dichloropropane	BDL	0.9	U
Trichloroethene	BDL	0.6	U
Dibromochloromethane	BDL	0.2	U
1,2-Dibromoethane	BDL	0.2	U
1,1,2-Trichloroethane	BDL	0.2	U
Benzene	BDL	0.2	U
1,3-Dichloropropane	BDL	0.2	U
Bromoform	BDL	0.3	U
Tetrachloroethene	BDL	0.1	U
1,1,2,2-Tetrachloroethane	BDL	0.4	U
Toluene	BDL	0.2	U
Chlorobenzene	BDL	0.2	U
1,1,1,2-Tetrachlorethane	BDL	0.2	U
Ethylbenzene	BDL	0.2	U

WESTON-GULF COAST LABORATORIES, INC.
2417 Bond St., University Park, Illinois 60466
Phones: (708) 534-5200 (219) 885-7077 (815) 723-7533

ANALYTICAL REPORT

To: Techalloy
Roy F. Weston, Incorporated
3 Hawthorn Parkway, Suite 400
Vernon Hills, IL 60061

Attn: Mr. Jack Thorsen

Date: Wednesday December 19th, 1990

RE: Non-responsive
Project # 1986-06-01-0000
Lab ID: 9012G133-007
Sample Date: 12/12/90
Date Received: 12/12/90
Units: UG/L

VOLATILES BY GC/MS, METHOD 524 LIST

Volatile Compound	Result	Reporting Limit	Flag
Dichlorodifluoromethane	BDL	0.2	U
Chloromethane	BDL	0.2	U
Bromomethane	BDL	0.1	U
Vinyl Chloride	BDL	0.2	U
Chloroethane	BDL	0.1	U
Methylene Chloride	BDL	0.8	U
Trichlorofluoromethane	BDL	0.5	U
1,1-Dichloroethene	BDL	0.2	U
1,1-Dichloroethane	BDL	0.3	U
cis-1,2-Dichloroethene	BDL	0.3	U
2,2-Dichloropropane	BDL	0.3	U
trans-1,2-Dichloroethene	BDL	0.2	U
Chloroform	BDL	0.3	U
Bromochloromethane	BDL	0.3	U
1,2-Dichloroethane	BDL	0.3	U
1,1,1-Trichloroethane	BDL	0.2	U
Carbon Tetrachloride	BDL	0.1	U

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To: Techalloy
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Attn: Mr. Jack Thorsen

Date: Wednesday December 19th, 1990

RE: Non-responsive
Project # 1986-06-01-0000
Lab ID: 9012G133-007
Sample Date: 12/12/90
Date Received: 12/12/90
Units: UG/L

VOLATILES BY GC/MS, METHOD 524 LIST

Volatile Compound	Result	Reporting Limit	Flag
1,2-Dichlorobenzene	BDL	0.3	U
n-Butylbenzene	BDL	0.3	U
1,2-Dibromo-3-Chloropropane	BDL	0.6	U
1,2,4-Trichlorobenzene	BDL	0.5	U
Hexachlorobutadiene	BDL	0.5	U
Naphthalene	BDL	0.4	U
1,2,3-Trichlorobenzene	BDL	0.7	U
cis-1,3-Dichloropropene	BDL	0.2	U
trans-1,3-Dichloropropene	BDL	0.2	U

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Attn: Mr. Jack Thorsen

Date: Wednesday December 19th 1990

RE: Non-responsive
Project # 1986-06-01-0000
Lab ID: 9012G133-007
Sample Date: 12/12/90
Date Received: 12/12/90
Units: UG/L

VOLATILES BY GC/MS, METHOD 524 LIST

Volatile Compound	Result	Reporting Limit	Flag
Styrene	BDL	0.8	U
p-Xylene	BDL	0.2	U
m-Xylene	BDL	0.2	U
o-Xylene	BDL	0.4	U
Bromobenzene	BDL	0.3	U
1,2,3-Trichloropropane	BDL	0.4	U
Isopropylbenzene	BDL	0.3	U
n-Propylbenzene	BDL	0.3	U
2-Chlorotoluene	BDL	0.3	U
4-Chlorotoluene	BDL	0.3	U
1,3,5-Trimethylbenzene	BDL	0.3	U
tert-Butylbenzene	BDL	0.3	U
1,2,4-Trimethylbenzene	BDL	0.3	U
sec-Butylbenzene	BDL	0.3	U
p-Isopropyltoluene	BDL	0.3	U
1,3-Dichlorobenzene	BDL	0.3	U
1,4-Dichlorobenzene	BDL	0.3	U

WESTON-GULF COAST LABORATORIES, INC.
2417 Bond St., University Park, Illinois 60466
Phones: (708) 534-5200 (219) 885-7077 (815) 723-7533

ANALYTICAL REPORT

To: Techalloy
Roy F. Weston, Incorporated
3 Hawthorn Parkway, Suite 400
Vernon Hills, IL 60061

Attn: Mr. Jack Thorsen

Date: Wednesday December 19th, 1990

RE: Non-responsive
Project # 1988-08-01-0000
Lab ID: 9012G133-007 REPREP
Sample Date: 12/12/90
Date Received: 12/12/90
Units: UG/L

VOLATILES BY GC/MS, METHOD 524 LIST

Volatile Compound	Result	Reporting Limit	Flag
Dichlorodifluoromethane	BDL	0.2	U
Chloromethane	BDL	0.2	U
Bromomethane	BDL	0.1	U
Vinyl Chloride	BDL	0.2	U
Chloroethane	BDL	0.1	U
Methylene Chloride	BDL	0.8	U
Trichlorofluoromethane	BDL	0.5	U
1,1-Dichloroethene	BDL	0.2	U
1,1-Dichloroethane	BDL	0.3	U
cis-1,2-Dichloroethene	BDL	0.3	U
2,2-Dichloropropane	BDL	0.3	U
trans-1,2-Dichloroethene	BDL	0.2	U
Chloroform	BDL	0.3	U
Bromochloromethane	BDL	0.3	U
1,2-Dichloroethane	BDL	0.3	U
1,1,1-Trichloroethane	BDL	0.2	U
Carbon Tetrachloride	BDL	0.1	U

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To: Techalloy
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3 Hawthorn Parkway, Suite 400
Vernon Hills, IL 60061

Attn: Mr. Jack Thorsen

Date: Wednesday December 19th, 1990

RE: Non-responsive
Project # 1988-06-01-0000
Lab ID: 9012G133-007
Sample Date: 12/12/90
Date Received: 12/12/90
Units: UG/L

Tentatively Identified Compounds

No Volatile Compounds greater than 10% of the nearest internal standard were tentatively identified by mass spectral library search. This is exclusive of any target compounds, surrogates or internal standards.

WESTON-GULF COAST LABORATORIES, INC.
2417 Bond St., University Park, Illinois 60466
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ANALYTICAL REPORT

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Date: Wednesday December 19th, 1990

RE: Non-responsive
Project # 1986-06-01-0000
Lab ID: 9012G133-007 REPREP
Sample Date: 12/12/90
Date Received: 12/12/90
Units: UG/L

VOLATILES BY GC/MS, METHOD 524 LIST

Volatile Compound	Result	Reporting Limit	Flag
Styrene	BDL	0.8	U
p-Xylene	BDL	0.2	U
m-Xylene	BDL	0.2	U
o-Xylene	BDL	0.4	U
Bromobenzene	BDL	0.3	U
1,2,3-Trichloropropane	BDL	0.4	U
Isopropylbenzene	BDL	0.3	U
n-Propylbenzene	BDL	0.3	U
2-Chlorotoluene	BDL	0.3	U
4-Chlorotoluene	BDL	0.3	U
1,3,5-Trimethylbenzene	BDL	0.3	U
tert-Butylbenzene	BDL	0.3	U
1,2,4-Trimethylbenzene	BDL	0.3	U
sec-Butylbenzene	BDL	0.3	U
p-Isopropyltoluene	BDL	0.3	U
1,3-Dichlorobenzene	BDL	0.3	U
1,4-Dichlorobenzene	BDL	0.3	U

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ANALYTICAL REPORT

To: Techalloy
Roy F. Weston, Incorporated
3 Hawthorn Parkway, Suite 400
Vernon Hills, IL 60061

Attn: Mr. Jack Thorsen

Date: Wednesday December 19th, 1990

RE: Non-responsive
Project # [illegible]
Lab ID: 9012G133-007 REPREP
Sample Date: 12/12/90
Date Received: 12/12/90
Units: UG/L

VOLATILES BY GC/MS, METHOD 524 LIST

Volatile Compound	Result	Reporting Limit	Flag
1,1-Dichloropropene	BDL	0.2	U
Bromodichloromethane	BDL	0.2	U
Dibromomethane	BDL	0.4	U
1,2-Dichloropropane	BDL	0.9	U
Trichloroethene	BDL	0.6	U
Dibromochloromethane	BDL	0.2	U
1,2-Dibromoethane	BDL	0.2	U
1,1,2-Trichloroethane	BDL	0.2	U
Benzene	BDL	0.2	U
1,3-Dichloropropane	BDL	0.2	U
Bromoform	BDL	0.3	U
Tetrachloroethene	BDL	0.1	U
1,1,2,2-Tetrachloroethane	BDL	0.4	U
Toluene	BDL	0.2	U
Chlorobenzene	BDL	0.2	U
1,1,1,2-Tetrachlorethane	BDL	0.2	U
Ethylbenzene	BDL	0.2	U

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2417 Bond St., University Park, Illinois 60466
Phones: (708) 534-5200 (219) 885-7077 (815) 723-7533

ANALYTICAL REPORT

To: **Techalloy**
Roy F. Weston, Incorporated
3 Hawthorn Parkway, Suite 400
Vernon Hills, IL 60061

Attn: **Mr. Jack Thorsen**

Date: Wednesday December 19th, 1990

RE: Non-responsive
Project # 1986-06-01-0000
Lab ID: 9012G133-008
Sample Date: 12/12/90
Date Received: 12/12/90
Units: UG/L

VOLATILES BY GC/MS, METHOD 524 LIST

Volatile Compound	Result	Reporting Limit	Flag
Dichlorodifluoromethane	BDL	0.2	U
Chloromethane	BDL	0.2	U
Bromomethane	BDL	0.1	U
Vinyl Chloride	BDL	0.2	U
Chloroethane	BDL	0.1	U
Methylene Chloride	BDL	0.8	U
Trichlorofluoromethane	BDL	0.5	U
1,1-Dichloroethene	BDL	0.2	U
1,1-Dichloroethane	BDL	0.3	U
cis-1,2-Dichloroethene	BDL	0.3	U
2,2-Dichloropropane	BDL	0.3	U
trans-1,2-Dichloroethene	BDL	0.2	U
Chloroform	BDL	0.3	U
Bromochloromethane	BDL	0.3	U
1,2-Dichloroethane	BDL	0.3	U
1,1,1-Trichloroethane	BDL	0.2	U
Carbon Tetrachloride	BDL	0.1	U

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ANALYTICAL REPORT

To: Techalloy
Roy F. Weston, Incorporated
3 Hawthorn Parkway, Suite 400
Vernon Hills, IL 60061

Attn: Mr. Jack Thorsen

Date: Wednesday December 19th, 1990

RE: Non-responsive
Project # 1986-06-01-0000
Lab ID: 9012G133-007 REPREP
Sample Date: 12/12/90
Date Received: 12/12/90
Units: UG/L

VOLATILES BY GC/MS, METHOD 524 LIST

Volatile Compound	Result	Reporting Limit	Flag
1,2-Dichlorobenzene	BDL	0.3	U
n-Butylbenzene	BDL	0.3	U
1,2-Dibromo-3-Chloropropane	BDL	0.6	U
1,2,4-Trichlorobenzene	BDL	0.5	U
Hexachlorobutadiene	BDL	0.5	U
Naphthalene	BDL	0.4	U
1,2,3-Trichlorobenzene	BDL	0.7	U
cis-1,3-Dichloropropene	BDL	0.2	U
trans-1,3-Dichloropropene	BDL	0.2	U

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ANALYTICAL REPORT

To: **Techalloy**
Roy F. Weston, Incorporated
3 Hawthorn Parkway, Suite 400
Vernon Hills, IL 60061

Attn: **Mr. Jack Thorsen**

Date: Wednesday December 19th, 1990

RE: [redacted]
Project # 1986-06-01-0000
Lab ID: **9012G133-008**
Sample Date: 12/12/90
Date Received: 12/12/90
Units: UG/L

VOLATILES BY GC/MS, METHOD 524 LIST

Volatile Compound	Result	Reporting Limit	Flag
Styrene	BDL	0.8	U
p-Xylene	BDL	0.2	U
m-Xylene	BDL	0.2	U
o-Xylene	BDL	0.4	U
Bromobenzene	BDL	0.3	U
1,2,3-Trichloropropane	BDL	0.4	U
Isopropylbenzene	BDL	0.3	U
n-Propylbenzene	BDL	0.3	U
2-Chlorotoluene	BDL	0.3	U
4-Chlorotoluene	BDL	0.3	U
1,3,5-Trimethylbenzene	BDL	0.3	U
tert-Butylbenzene	BDL	0.3	U
1,2,4-Trimethylbenzene	BDL	0.3	U
sec-Butylbenzene	BDL	0.3	U
p-Isopropyltoluene	BDL	0.3	U
1,3-Dichlorobenzene	BDL	0.3	U
1,4-Dichlorobenzene	BDL	0.3	U

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Date: Wednesday December 19th, 1990

RE: Non-responsive
Project # 1986-06-01-0000
Lab ID: **9012G133-008**
Sample Date: 12/12/90
Date Received: 12/12/90
Units: UG/L

VOLATILES BY GC/MS, METHOD 524 LIST

Volatile Compound	Result	Reporting Limit	Flag
1,1-Dichloropropene	BDL	0.2	U
Bromodichloromethane	BDL	0.2	U
Dibromomethane	BDL	0.4	U
1,2-Dichloropropane	BDL	0.9	U
Trichloroethene	BDL	0.6	U
Dibromochloromethane	BDL	0.2	U
1,2-Dibromoethane	BDL	0.2	U
1,1,2-Trichloroethane	BDL	0.2	U
Benzene	BDL	0.2	U
1,3-Dichloropropane	BDL	0.2	U
Bromoform	BDL	0.3	U
Tetrachloroethene	BDL	0.1	U
1,1,2,2-Tetrachloroethane	BDL	0.4	U
Toluene	BDL	0.2	U
Chlorobenzene	BDL	0.2	U
1,1,1,2-Tetrachlorethane	BDL	0.2	U
Ethylbenzene	BDL	0.2	U

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RE: Non-responsive
Project # 1986-06-01-0000
Lab ID: 9012G133-008
Sample Date: 12/12/90
Date Received: 12/12/90
Units: UG/L

Tentatively Identified Compounds

No Volatile Compounds greater than 10% of the nearest internal standard were tentatively identified by mass spectral library search. This is exclusive of any target compounds, surrogates or internal standards.

WESTON-GULF COAST LABORATORIES, INC.
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Roy F. Weston, Incorporated
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Attn: Mr. Jack Thorsen

Date: Wednesday December 19th, 1990

RE: Non-responsive
Project # 1988-08-01-0000
Lab ID: 9012G133-008
Sample Date: 12/12/90
Date Received: 12/12/90
Units: UG/L

VOLATILES BY GC/MS, METHOD 524 LIST

Volatile Compound	Result	Reporting Limit	Flag
1,2-Dichlorobenzene	BDL	0.3	U
n-Butylbenzene	BDL	0.3	U
1,2-Dibromo-3-Chloropropane	BDL	0.6	U
1,2,4-Trichlorobenzene	BDL	0.5	U
Hexachlorobutadiene	BDL	0.5	U
Naphthalene	BDL	0.4	U
1,2,3-Trichlorobenzene	BDL	0.7	U
cis-1,3-Dichloropropene	BDL	0.2	U
trans-1,3-Dichloropropene	BDL	0.2	U

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Vernon Hills, IL 60061

Attn: Mr. Jack Thorsen

Date: Wednesday December 19th, 1990

RE: Non-responsive
Project # 1986-06-01-0000
Lab ID: 9012G133-009
Sample Date: 12/12/90
Date Received: 12/12/90
Units: UG/L

VOLATILES BY GC/MS, METHOD 524 LIST

Volatile Compound	Result	Reporting Limit	Flag
1,1-Dichloropropene	BDL	0.2	U
Bromodichloromethane	BDL	0.2	U
Dibromomethane	BDL	0.4	U
1,2-Dichloropropane	BDL	0.9	U
Trichloroethene	BDL	0.6	U
Dibromochloromethane	BDL	0.2	U
1,2-Dibromoethane	BDL	0.2	U
1,1,2-Trichloroethane	BDL	0.2	U
Benzene	BDL	0.2	U
1,3-Dichloropropane	BDL	0.2	U
Bromoform	BDL	0.3	U
Tetrachloroethene	BDL	0.1	U
1,1,2,2-Tetrachloroethane	BDL	0.4	U
Toluene	BDL	0.2	U
Chlorobenzene	BDL	0.2	U
1,1,1,2-Tetrachlorethane	BDL	0.2	U
Ethylbenzene	BDL	0.2	U

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Vernon Hills, IL 60061

Attn: **Mr. Jack Thorsen**

Date: Wednesday December 19th, 1990

RE: Non-responsive
Project # 1986-06-01-0000
Lab ID: **9012G133-009**
Sample Date: 12/12/90
Date Received: 12/12/90
Units: UG/L

VOLATILES BY GC/MS, METHOD 524 LIST

Volatile Compound	Result	Reporting Limit	Flag
Dichlorodifluoromethane	BDL	0.2	U
Chloromethane	BDL	0.2	U
Bromomethane	BDL	0.1	U
Vinyl Chloride	BDL	0.2	U
Chloroethane	BDL	0.1	U
Methylene Chloride	BDL	0.8	U
Trichlorofluoromethane	BDL	0.5	U
1,1-Dichloroethene	BDL	0.2	U
1,1-Dichloroethane	2	0.3	
cis-1,2-Dichloroethene	BDL	0.3	U
2,2-Dichloropropane	BDL	0.3	U
trans-1,2-Dichloroethene	BDL	0.2	U
Chloroform	BDL	0.3	U
Bromochloromethane	BDL	0.3	U
1,2-Dichloroethane	BDL	0.3	U
1,1,1-Trichloroethane	BDL	0.2	U
Carbon Tetrachloride	BDL	0.1	U

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Lab ID: 9012G133-009
Sample Date: 12/12/90
Date Received: 12/12/90
Units: UG/L

VOLATILES BY GC/MS, METHOD 524 LIST

Volatile Compound	Result	Reporting Limit	Flag
1,2-Dichlorobenzene	BDL	0.3	U
n-Butylbenzene	BDL	0.3	U
1,2-Dibromo-3-Chloropropane	BDL	0.6	U
1,2,4-Trichlorobenzene	BDL	0.5	U
Hexachlorobutadiene	BDL	0.5	U
Naphthalene	BDL	0.4	U
1,2,3-Trichlorobenzene	BDL	0.7	U
cis-1,3-Dichloropropene	BDL	0.2	U
trans-1,3-Dichloropropene	BDL	0.2	U

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Date: Wednesday December 19th, 1990

RE: Non-responsive
Project # 1988-00-01-0000
Lab ID: 9012G133-009
Sample Date: 12/12/90
Date Received: 12/12/90
Units: UG/L

VOLATILES BY GC/MS, METHOD 524 LIST

Volatile Compound	Result	Reporting Limit	Flag
Styrene	BDL	0.8	U
p-Xylene	BDL	0.2	U
m-Xylene	BDL	0.2	U
o-Xylene	BDL	0.4	U
Bromobenzene	BDL	0.3	U
1,2,3-Trichloropropane	BDL	0.4	U
Isopropylbenzene	BDL	0.3	U
n-Propylbenzene	BDL	0.3	U
2-Chlorotoluene	BDL	0.3	U
4-Chlorotoluene	BDL	0.3	U
1,3,5-Trimethylbenzene	BDL	0.3	U
tert-Butylbenzene	BDL	0.3	U
1,2,4-Trimethylbenzene	BDL	0.3	U
sec-Butylbenzene	BDL	0.3	U
p-Isopropyltoluene	BDL	0.3	U
1,3-Dichlorobenzene	BDL	0.3	U
1,4-Dichlorobenzene	BDL	0.3	U

WESTON-GULF COAST LABORATORIES, INC.
2417 Bond St., University Park, Illinois 60466
Phones: (708) 534-5200 (219) 885-7077 (815) 723-7533

ANALYTICAL REPORT

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Attn: Mr. Jack Thorsen

Date: Wednesday December 19th, 1990

RE: Non-responsive
Project # 1986-06-01-0000
Lab ID: 9012G133-009
Sample Date: 12/12/90
Date Received: 12/12/90
Units: UG/L

Tentatively Identified Compounds

No Volatile Compounds greater than 10% of the nearest internal standard were tentatively identified by mass spectral library search. This is exclusive of any target compounds, surrogates or internal standards.

Custody Transfer Record/Lab Work Request

WESTON

WESTON Analytics Use Only
9006206

Client TECHALLOY CO. INC.

Work Order

Date Rec'd. Date Due

RFW Contact

Client Contact/Phone LARRY WHOELL 923-2131

Refrigerator#	08C	CL08R								
#/Type Container	40ML									
Containers/Volume	2/40ML.									
Preservative	NONE									
ANALYSES REQUESTED										

WA Use Only Lab ID	Client ID/Description	Matrix	Date Collected								
(01)	RS05 30' WELL FAST TURN AROUND	W	6-11-90	X							

Matrix:
S - Soil
SE - Sediment
SO - Solid
W - Water
O - Oil
A - Air
DS - Drum Solids
DL - Drum Liquids
F - Fish
X - Other

Special Instructions:

Item/Reason	Relinquished by	Received by	Date	Time	Item/Reason	Relinquished by	Received by	Date	Time

WESTON Analytics Use Only

Samples Were:
1 Shipped or Hand-Delivered
NOTES:

2 Ambient or Chilled
NOTES:

3 Received Broken/Leaking (Improperly Sealed)
Y N
NOTES:

4 Properly Preserved
Y N
NOTES:

5 Received Within Holding Times
Y N
NOTES:

COC Tape Was:
1 Present on Outer Package Y N
2 Unbroken on Outer Package Y N
3 Present on Sample Y N
4 Unbroken on Sample Y N
NOTES:

COC Record Was:
1 Present Upon Receipt of Samples Y N

Discrepancies Between Sample Labels and COC Record? Y N
NOTES:

RFW ENGINEERS
MANAGERS DESIGNERS/CONSULTANTS

Custody Transfer Record/Lab Work Request

Received By _____ Client TECHALLOY RFW Contact _____
Date 6-7-90 Client Contact SCOTT CARR Date Due _____
Assigned to _____ Phone 815-923-2131 Project Number _____

SAMPLE IDENTIFICATION

ANALYSES REQUESTED

Sample No.	Client ID No.	Description	Matrix	Date Collected	Container/Preservative								
RS 01	KERNS	16'-19' WELL PT	W	6-7-90	3(40mL)/NONE - 1 W/ Bubbles								
		Rec. 1-Labbelled		Dist.	H2O - Not on COC pa 6/8/90								

Matrix:
S- Soil **DS-** Drum Solids
W- Water **DL-** Drum Liquids
O- Oil **X-** Other

Special Instructions:

Items/Reason	Relinquished By	Received By	Date	Time	Items/Reason	Relinquished By	Received By	Date	Time
		[illegible]	6/11/90	1500					

RFW 21-21- [illegible]/86

WESTON-GULF COAST LABORATORIES, INC.
2417 Bond St., University Park, Illinois 60466
Phones: (708) 534-5200 (219) 885-7077 (815) 723-7533

ANALYTICAL REPORT

To: **Tekalloy**
Roy F. Weston, Incorporated
100 Corporate North, Suite 101
Bannockburn, IL 60015

Attn: **Mr. Carlos Serna**

Date: Friday June 15th, 1990

RE: **RS-01**
Project # 1989-06-01-0000
Lab ID: **9006G192-001**
Sample Date: 06/07/90
Date Received: 06/08/90
Units: UG/L

VOLATILES BY GC/MS, HSL LIST

Volatile Compound	Result	Detection Limit	Flag
Chloromethane	BDL	10	U
Bromomethane	BDL	10	U
Vinyl Chloride	BDL	10	U
Chloroethane	BDL	10	U
Methylene Chloride	12	5	
Acetone	BDL	10	U
Carbon Disulfide	BDL	5	U
1,1-Dichloroethene	BDL	5	U
1,1-Dichloroethane	BDL	5	U
1,2-Dichloroethene (total)	BDL	5	U
Chloroform	BDL	5	U
1,2-Dichloroethane	BDL	5	U
2-Butanone	BDL	10	U
1,1,1-Trichloroethane	5	5	
Carbon Tetrachloride	BDL	5	U
Vinyl Acetate	BDL	10	U
Bromodichloromethane	BDL	5	U

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Phones: (312) 534-5200 (219) 885-7077 (815) 723-7533

DATA QUALIFIERS

u - Indicates an inorganic compound was analyzed for but not detected.

U - Indicates an organic compound was analyzed for but not detected.

J - Indicates an estimated value for either a TIC or an analyte that meets the identification criteria but the result is less than the specified detection limit.

B - Indicates the compound was found in the blank and the sample.

T - Indicates the compound was found in the TCLP extraction blank and the sample.

E - Concentrations exceed calibration range of the instrument.

I - Indicates Interference.

BS - Indicates matrix analyses were conducted on reagent grade water.

BSD - Blank Spike Duplicate

BDL - Below Detection Limit

MS - Matrix Spike

MSD - Matrix Spike Duplicate

D - Indicates that surrogate/matrix spike recoveries were not obtained because the extract had to be diluted for analysis.

DL - Indicates a secondary dilution

NA - Not Applicable

DF - Dilution factor

X - Result is by calculation

NOTES:

Solid, sediment and sludge results are reported on a dry weight basis except when analyzed for Landfill disposal parameters (such as incineration or Illinois Green Sheet parameters). All other mg/kg results are reported on an "as received" basis.

Reporting limits are detection limits adjusted for sample size used, dilutions made, and in the case of dry weight results, the moisture content of the sample.

Revised 02/07/90

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Date: Friday June 15th, 1990

RE: **RS-01**
Project # 1989-06-01-0000
Lab ID: **9006G192-001**
Sample Date: 06/07/90
Date Received: 06/08/90
Units: UG/L

Tentatively Identified Compounds

1 Volatile Compounds greater than 10% of the nearest internal standard were tentatively identified by mass spectral library search. This is exclusive of any target compounds, surrogates or internal standards.

Volatile Compound	Retention Time	Estimated Concentration
HYDROCARBON C6H14	18.66	10 J

WESTON-GULF COAST LABORATORIES, INC.
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Attn: Mr. Carlos Serna

Date: Friday June 15th, 1990

RE: RS-01
Project # 1989-06-01-0000
Lab ID: 9006G192-001
Sample Date: 06/07/90
Date Received: 06/08/90
Units: UG/L

VOLATILES BY GC/MS, HSL LIST

Volatile Compound	Result	Detection Limit	Flag
1,2-Dichloropropane	BDL	5	U
cis-1,3-Dichloropropene	BDL	5	U
Trichloroethene	BDL	5	U
Dibromochloromethane	BDL	5	U
1,1,2-Trichloroethane	BDL	5	U
Benzene	BDL	5	U
Trans-1,3-Dichloropropene	BDL	5	U
Bromoform	BDL	5	U
4-Methyl-2-pentanone	BDL	10	U
2-Hexanone	BDL	10	U
Tetrachloroethene	BDL	5	U
1,1,2,2-Tetrachloroethane	BDL	5	U
Toluene	BDL	5	U
Chlorobenzene	BDL	5	U
Ethylbenzene	BDL	5	U
Styrene	BDL	5	U
Xylene (total)	BDL	5	U

WESTON
MANAGERS DESIGNERS/CONSULTANTS

WESTON-GULF COAST LABORATORIES, INC.
2417 Bond St., University Park, Illinois 60466
Phones: (708) 534-5200 (219) 885-7077 (815) 723-7533

ANALYTICAL REPORT

To: Tekalloy
Roy F. Weston, Incorporated
100 Corporate North, Suite 101
Bannockburn, IL 60015

Attn: Mr. Carlos Serna

Date: Friday June 15th, 1990

RE: RS05 30' Well
Project # 1989-06-01-0000
Lab ID: 9006G206-001
Sample Date: 06/11/90
Date Received: 06/12/90
Units: UG/L

VOLATILES BY GC/MS, HSL LIST

Volatile Compound	Result	Detection Limit	Flag
1,2-Dichloropropane	BDL	5	U
cis-1,3-Dichloropropene	BDL	5	U
Trichloroethene	BDL	5	U
Dibromochloromethane	BDL	5	U
1,1,2-Trichloroethane	BDL	5	U
Benzene	BDL	5	U
Trans-1,3-Dichloropropene	BDL	5	U
Bromoform	BDL	5	U
4-Methyl-2-pentanone	BDL	10	U
2-Hexanone	BDL	10	U
Tetrachloroethene	BDL	5	U
1,1,2,2-Tetrachloroethane	BDL	5	U
Toluene	BDL	5	U
Chlorobenzene	BDL	5	U
Ethylbenzene	BDL	5	U
Styrene	BDL	5	U
Xylene (total)	BDL	5	U

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ANALYTICAL REPORT

To: Tekalloy
Roy F. Weston, Incorporated
100 Corporate North, Suite 101
Bannockburn, IL 60015

Attn: Mr. Carlos Serna

Date: Friday June 15th, 1990

RE: RS05 30' Well
Project # 1989-06-01-0000
Lab ID: 9006G206-001
Sample Date: 06/11/90
Date Received: 06/12/90
Units: UG/L

VOLATILES BY GC/MS, HSL LIST

Volatile Compound	Result	Detection Limit	Flag
Chloromethane	BDL	10	U
Bromomethane	BDL	10	U
Vinyl Chloride	BDL	10	U
Chloroethane	BDL	10	U
Methylene Chloride	8	5	
Acetone	BDL	10	U
Carbon Disulfide	BDL	5	U
1,1-Dichloroethene	BDL	5	U
1,1-Dichloroethane	BDL	5	U
1,2-Dichloroethene (total)	BDL	5	U
Chloroform	BDL	5	U
1,2-Dichloroethane	BDL	5	U
2-Butanone	BDL	10	U
1,1,1-Trichloroethane	BDL	5	U
Carbon Tetrachloride	BDL	5	U
Vinyl Acetate	BDL	10	U
Bromodichloromethane	BDL	5	U

ROY F. WESTON, INC.

CORRECTIVE MEASURES STUDY WORK PLAN

WESTON®
MANAGERS DESIGNERS/CONSULTANTS

CORRECTIVE MEASURES STUDY
WORK PLAN

Prepared for

TECHALLOY COMPANY, INC.
Union, Illinois

Prepared by

ROY F. WESTON, INC.
Three Hawthorn Parkway
Vernon Hills, Illinois 60061

October
~~September~~ 1996

Work Order No. 01989-028-001

CORRECTIVE MEASURES STUDY
WORK PLAN

Prepared for

TECHALLOY COMPANY, INC.
Union, Illinois

September 1996

Mark E. Kleiner, P.E.
Senior Project Engineer

Carlos J. Serna, P.G.
Senior Project Manager

Prepared by

ROY F. WESTON, INC.
Three Hawthorn Parkway
Vernon Hills, Illinois 60061

Work Order No. 01989-028-001

TABLE OF CONTENTS

LIST OF FIGURES

SECTION 1
INTRODUCTION

This Corrective Measures Study (CMS) work plan has been prepared by Roy F. Weston, Inc. (WESTON®) in accordance with the requirements of the Administrative Order of Consent (AOC) issued to Techalloy Company Inc. (Techalloy), Union, Illinois, by the United States Environmental Protection Agency (U.S. EPA) on 27 January 1993 and the RCRA Corrective Action Plan (CAP) Guidance, May 1994. This work plan summarizes the current site conditions and issues identified in the RCRA Facility Investigation (RFI) report and outlines the tasks Techalloy will conduct during the CMS. The purpose of the CMS is to develop and evaluate the corrective action alternative(s) and to recommend the corrective measure(s) to be taken at the Union, Illinois, Techalloy Facility.

Section 2 of this report covers the current conditions at the site, including background information, the RFI findings, and the interim measures currently being employed at the site. Section 3 defines the scope of the CMS. Section 4 defines the schedule for CMS documents.

SECTION 2
SUMMARY OF PRESENT SITE CONDITIONS

This section describes the current conditions at the Techalloy facility in Union, Illinois. Information is provided from the RFI report (WESTON, 1996) and the Groundwater Treatment System Interim Measures Work Plan.

2.1 BACKGROUND INFORMATION

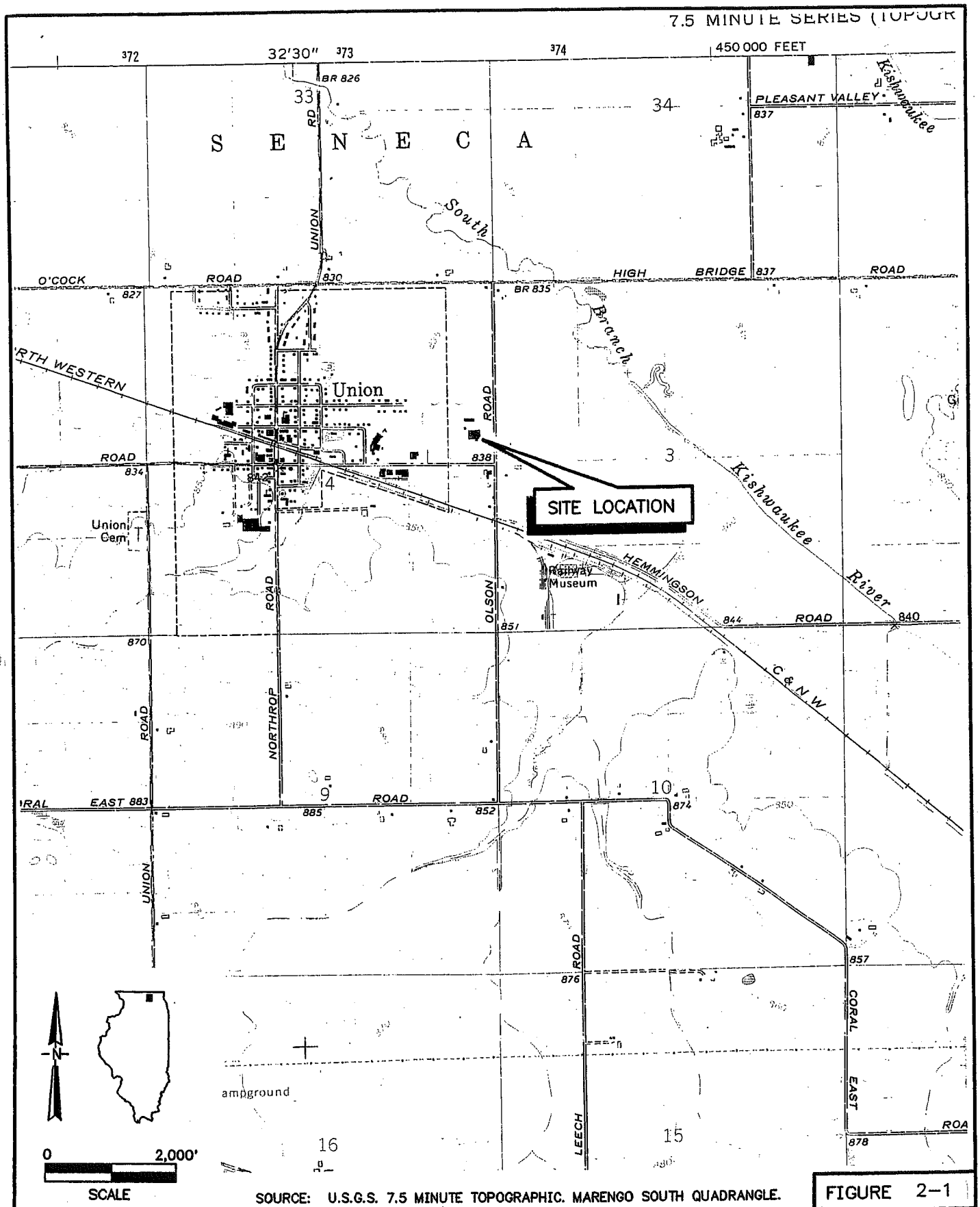
2.1.1 Site Location

The Techalloy site is located at the intersection of Olson and Jefferson Roads in the Village of Union, Coral Township, McHenry County, Illinois. The Techalloy site is located in the SE 1/4, SE 1/4, NW 1/4, of Section 4, Township 43 North, Range 6 East (Figure 2-1). The developed portion of the site occupies five acres. The Techalloy site has an additional 29 acres of agricultural land surrounding the facility. A complete Techalloy property boundary map is presented as Figure 2-2.

2.1.2 Site History

Techalloy began operations at the Union, Illinois, facility in 1960. Prior to 1960, the property was farmland. Since 1960, Techalloy has been operating as a specialty handler of stainless steel wire products. The end products are stainless steel wire coils of varying diameters and tensile strengths, which are distributed with and without special coatings.

Past manufacturing processes included the use of virgo salts for descaling. This process has been replaced by the ammonium bifluoride, nitric acid, and potassium permanganate process used today.



SOURCE: U.S.G.S. 7.5 MINUTE TOPOGRAPHIC. MARENGO SOUTH QUADRANGLE.

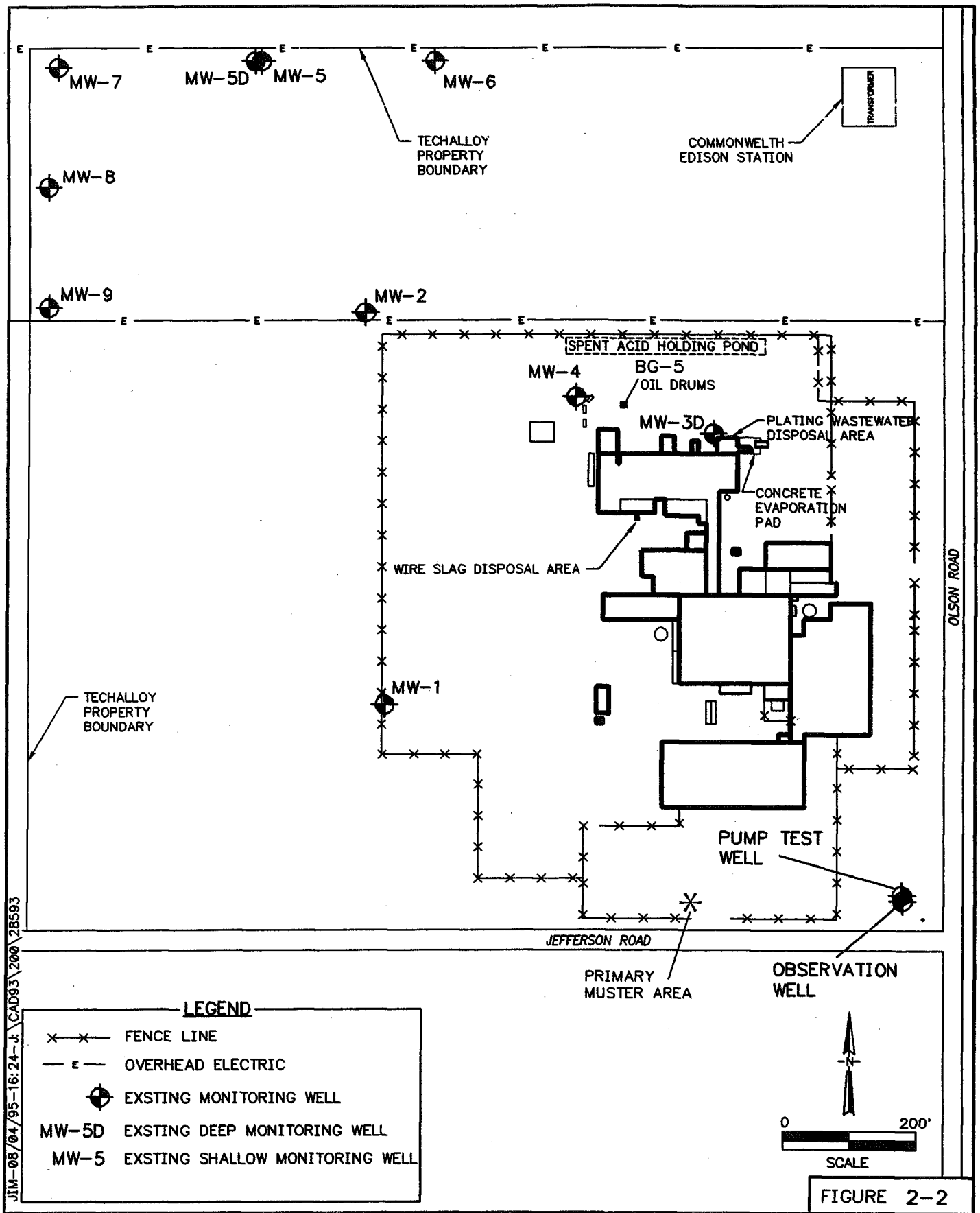
FIGURE 2-1

WESTON MANAGERS DESIGNERS/CONSULTANTS

Three Hawthorn Parkway
Vernon Hills, Illinois
60061

SITE LOCATION

TECHALLOY COMPANY, INC.
Union, Illinois



JIM-08/04/95-16:24-J:\CAD93\200\28593

FIGURE 2-2

WESTON MANAGERS DESIGNERS/CONSULTANTS

Three Hawthorn Parkway
Vernon Hills, Illinois
60061

TECHALLOY PROPERTY BOUNDARY

TECHALLOY COMPANY, INC.
Union, Illinois

Sodium hydroxide and/or potassium hydroxide are used for degreasing and cleaning of wire.

Prior to 1978, chlorinated solvents were used to clean wires. In 1985, the use of chlorinated solvents stopped, and the wires were cleaned in an ultrasonic water bath.

In the early operations at the Techalloy facility (1960s), lead coating was used as a lubricant for drawing stainless steel wires through dies. The lead-coated wires were subsequently treated with lime to provide the roughness needed to draw the soap into the die. The Techalloy facility changed over to the current non-lead pre-coat process in the 1970s.

Spent acids are generated from the descaling baths that remove scale from the wire. From 1960 to 1980, the spent acids were sent to the spent acid holding pond. From 1980 to 1988, the spent acids and the rinse water from the descaling process were treated in-house at the acid treatment unit. Neutralization was first achieved with the metered addition of a caustic (sodium hydroxide or potassium hydroxide), until a near-neutral pH was reached. Neutralized acid was then conveyed to bag filters and was clarified. From 1988 to 1995, the spent acids, spent caustics, and rinse water were removed directly from the tanks and were transported off-site for treatment. In 1995, a closed loop reclamation system was installed to reclaim water from the rinse water, and spent caustics. The concentrated water and sludges developed from the reclamation operations of the system are shipped off-site as non-hazardous waste. The spent acids generated by the descaling bath, is shipped off-site as a hazardous waste.

From 1968 to 1979, plating waste water generated from copper cyanide and nickel sulfate plating processes was occasionally discharged at the northeast corner of the facility. From 1980 to 1988, the wastewater was treated at the in-house facility. In 1988, the plating process was converted to a closed loop filter system. The plating filters are transported off-site for treatment.

Trichloroethane (1,1,1-TCA and 1,1,2-TCA) was used as a degreaser from 1968 to 1985. The TCA was treated by evaporation on a concrete pad at the northeast corner of the facility.

Waste oils generated from processes at the site have been transported off-site for treatment. Ammonium bifluoride and metal sludges and a sludge from a proprietary alkaline baths and coating solutions have been transported off-site for treatment.

In 1990, WESTON, on behalf of Techalloy, submitted a RCRA closure plan to the Illinois Environmental Protection Agency (IEPA) for the Copper Cyanide Waste Unit (cyanide tank), the Hazardous Wastewater Treatment Facility (acid treatment unit), and the Acid Tank Room (acid pits of pickling house). The IEPA approved the closure plan with conditions on 8 February 1991. A Consent Order was signed by the U.S. EPA and Techalloy on 27 January 1993 to perform an RFI to fully determine the nature and extent of any release of hazardous waste and hazardous constituents from the facility and to perform both a CMS and interim measures (IMs) at the facility. The final RFI report was completed by WESTON in June of 1996.

2.2 RFI FINDINGS

The following subsections summarize the findings of the RFI report submitted to the U.S. EPA in June 1996.

2.2.1 Environmental Setting

2.2.1.1 General Site Setting

The buildings at the Techalloy property house the various metal working processes and are surrounded by a chain link fence. The majority of the property surrounding the Techalloy

facility is used for agriculture. The properties south, east, north, and northwest of the site are farmland and are sparsely populated with farm-related dwellings. A few small businesses are located southwest and west of the site along Jefferson Road, which runs along the south side of the facility. The eastern boundary of the Village of Union is situated approximately 125 feet west of the site. The Techalloy facility is situated on the southern fringe of an outwash plain. The outwash plain is dissected by the South Branch of the Kishwaukee River, which flows from the southeast to the northwest and lies approximately 1/2-mile northeast of the site.

2.2.1.2 Site Geology and Hydrogeology

Based on Phase I and Phase II RFI boring logs and on boring logs from past site drilling activities, the stratigraphy at the Techalloy facility is characterized as follows, from the surface downward:

- Volinia-silt loam—This layer is nearly level, well to very well drained, and approximately 1 to 3 feet thick.
- Wisconsinan Stage—Poorly sorted fine-to-coarse-grained sand and gravel. On the north side of the facility, this unit extends 30 to 35 feet below ground surface (bgs). On the northwest side of the site, this unit extends to 85 feet bgs.
- Marengo Till—Silty clay to clayey silt with trace amounts of sand and gravel. This unit is "massive" and impermeable, and does not include permeable sand layers of any significance. The till surface slopes from 30 feet to approximately 85 feet in a northwesterly direction, indicating evidence of the buried glacial outwash valley to the north of the Techalloy facility.
- Maquoketa Shale—Grayish-green and somewhat massive with distinct bedding. The bedrock was encountered at an approximate depth of 114 to 116 feet. The bedrock dips easterly at about 10 feet per mile.

The sand and gravel unit has been determined to be the underlying aquifer. Previous studies determined that groundwater occurs at approximately 9 feet bgs within the sand and gravel deposits. The upper boundary of the Marengo Till layer constitutes the lower boundary of the sand and gravel aquifer and occur at a depth of approximately 30 foot bgs at the Techalloy property. Groundwater within this aquifer flows northwestward.

2.2.2 Site Contamination

2.2.2.1 Identification of Solid Waste Management Units (SWMUs)

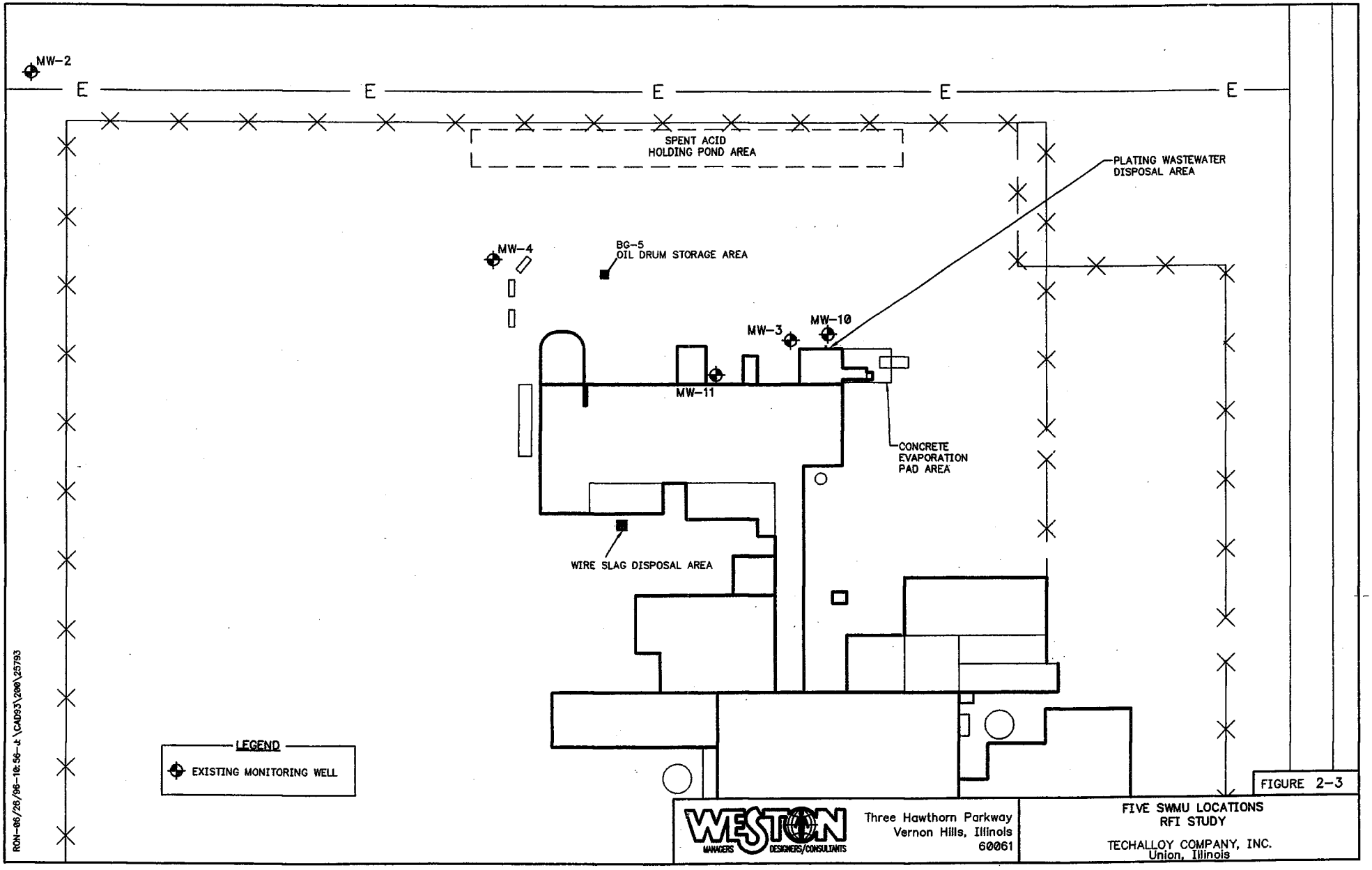
The RFI report identified the following five SWMUs at the Techalloy site (Figure 2-3):

- Wire Slag Disposal Area
- BG-5 Oil Drum Storage Area
- Concrete Evaporation Pad
- Spent Acid Holding Pond
- Plating Wastewater Disposal Area

Based on the historical use of solvents and process-related metals, chlorinated solvents consisting of 1,1,1-TCA, trichloroethylene (TCE), and tetrachloroethylene (PCE), as well as metals such as chromium, copper, lead, and zinc, are the primary contaminants of concern.

2.2.2.2 Soil Contamination

Based on the findings of the RFI, it appears the concentrations of volatile organic compounds (VOCs) in soil are located in an area surrounding the Concrete Evaporation Pad Area and are migrating northwest to within the Plating Wastewater Disposal Area and the BG-5 Oil Drum Storage Area. For the most part, the detected VOCs were 1,1,1-TCA, TCE, and PCE. The highest concentrations of VOCs in soil were found in the vadose zone


MW-2
E
E
E
E
E
SPENT ACID
HOLDING POND AREA
PLATING WASTEWATER
DISPOSAL AREA
MW-4
BG-5
OIL DRUM STORAGE AREA
MW-3
MW-10
MW-11
CONCRETE
EVAPORATION
PAD AREA
WIRE SLAG DISPOSAL AREA
LEGEND
EXISTING MONITORING WELL
RON-06/26/96-10:56-4 \CAD93\200\25793
WESTON
MANAGERS
DESIGNERS/CONSULTANTS
Three Hawthorn Parkway
Vernon Hills, Illinois
60061
FIVE SWMU LOCATIONS
RFI STUDY
TECHALLOY COMPANY, INC.
Union, Illinois
FIGURE 2-3

at a depth of 2 to 4 feet bgs. The extent of lateral migration of the VOCs in soil is limited to an area that is within the fenced limits of the Techalloy property (Figure 2-4).

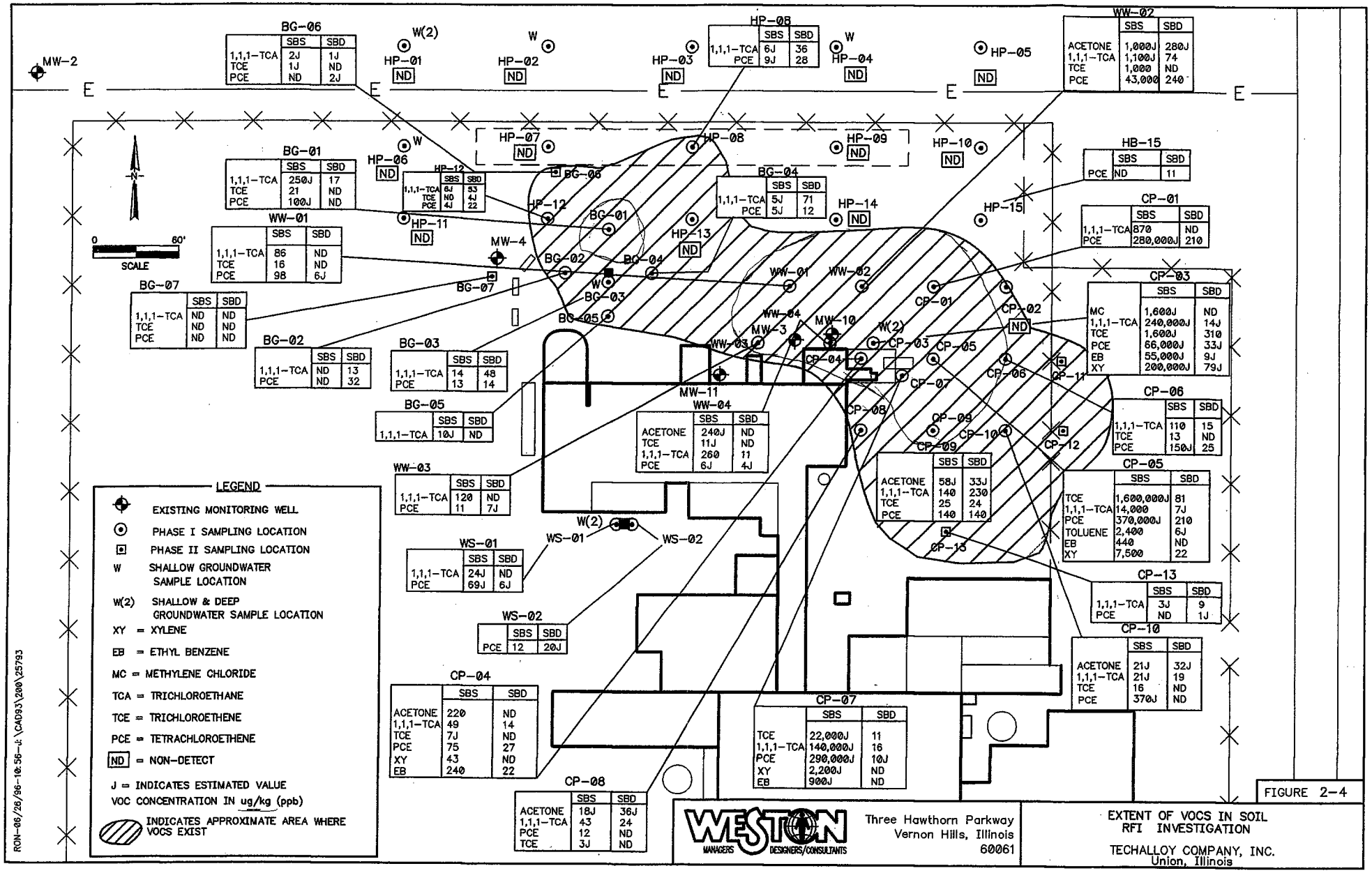
Based on information presented in the RFI report, it appears the metals-impacted area covers the subsurface soil of the Concrete Evaporation Pad Area, the Plating Wastewater Disposal Area, the eastern side of BG-5 Oil Drum Storage Area, and the Spent Acid Holding Pond. Soil impacted by metal constituents is limited to the on-site location within the fenced property of the Techalloy site (Figure 2-5).

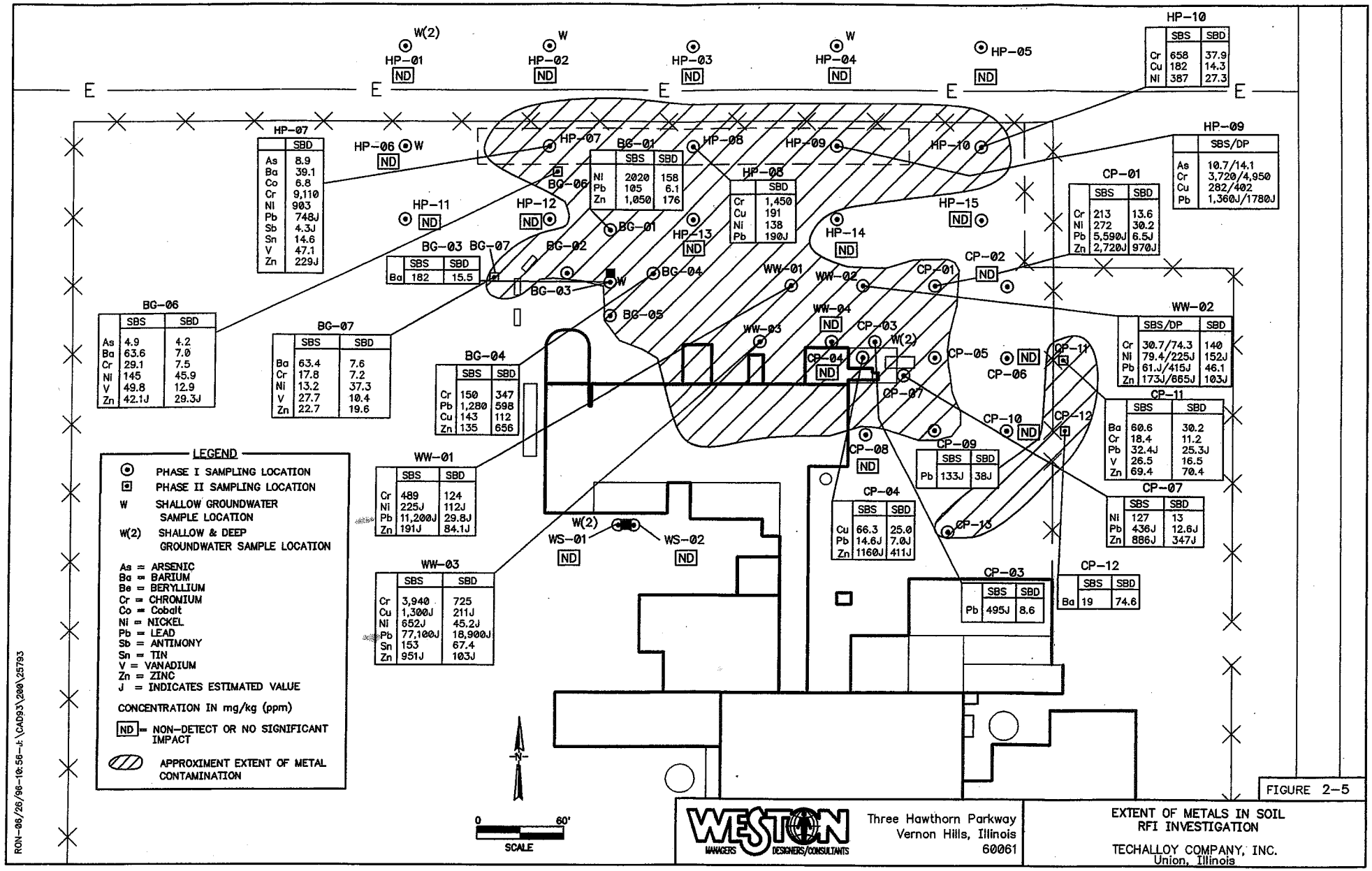
2.2.2.3 Groundwater Contamination

VOCs are present in groundwater as a plume originating from the Concrete Evaporation Pad Area, migrating northwest and off-site, approximately 5,800 feet downgradient of the site. The extent of VOCs in both the shallow and deep groundwater samples is presented in Figures 2-6 and 2-7, respectively.

Metals are present in groundwater at on-site locations but are not migrating off-site. Although monitoring wells and soil samples at the source areas indicate levels of metals, the monitoring wells downgradient of the source areas do not. Groundwater contamination of metals may be attributed to waste handling practices and to the BG-5 Drum Storage Area, the Concrete Evaporation Pad Area, and the Spent Acid Holding Pond.

Through cometabolisim processes, the 1,1,1-TCA, TCE, and PCE degrade to form compounds such as 1,2-DCE, 1,1-DCE, and 1,1-DCA. These three degradation compounds were frequently detected within the groundwater plume; however, the degradation compound, vinyl chloride, was not detected in any of the groundwater samples.


BG-06
SBS SBD
1,1,1-TCA 2J 1J
TCE 1J ND
PCE ND 2J
HP-08
SBS SBD
1,1,1-TCA 6J 36
PCE 9J 28
WW-02
SBS SBD
ACETONE 1,000J 280J
1,1,1-TCA 1,100J 74
TCE 1,000 ND
PCE 43,000 240
BG-01
SBS SBD
1,1,1-TCA 250J 17
TCE 21 ND
PCE 100J ND
HP-12
SBS SBD
1,1,1-TCA 6J 53
TCE ND 4J
PCE 4J 22
BG-04
SBS SBD
1,1,1-TCA 5J 71
PCE 5J 12
HB-15
SBS SBD
PCE ND 11
WW-01
SBS SBD
1,1,1-TCA 86 ND
TCE 16 ND
PCE 98 6J
CP-01
SBS SBD
1,1,1-TCA 870 ND
PCE 280,000J 210
BG-07
SBS SBD
1,1,1-TCA ND ND
TCE ND ND
PCE ND ND
CP-03
SBS SBD
MC 1,600J ND
1,1,1-TCA 240,000J 14J
TCE 1,600J 310
PCE 66,000J 33J
EB 55,000J 9J
XY 200,000J 79J
BG-02
SBS SBD
1,1,1-TCA ND 13
PCE ND 32
BG-03
SBS SBD
1,1,1-TCA 14 48
PCE 13 14
CP-06
SBS SBD
1,1,1-TCA 110 15
TCE 13 ND
PCE 150J 25
BG-05
SBS SBD
1,1,1-TCA 10J ND
MW-11
WW-04
SBS SBD
ACETONE 240J ND
TCE 11J ND
1,1,1-TCA 260 11
PCE 6J 4J
CP-05
SBS SBD
ACETONE 58J 33J
1,1,1-TCA 140 230
TCE 25 24
PCE 140 140
CP-05
SBS SBD
TCE 1,600,000J 81
1,1,1-TCA 14,000 7J
PCE 370,000J 210
TOLUENE 2,400 6J
EB 440 ND
XY 7,500 22
WW-03
SBS SBD
1,1,1-TCA 120 ND
PCE 11 7J
CP-13
SBS SBD
1,1,1-TCA 3J 9
PCE ND 1J
WS-01
SBS SBD
1,1,1-TCA 24J ND
PCE 69J 6J
WS-02
SBS SBD
PCE 12 20J
CP-10
SBS SBD
ACETONE 21J 32J
1,1,1-TCA 21J 19
TCE 16 ND
PCE 370J ND
CP-04
SBS SBD
ACETONE 220 ND
1,1,1-TCA 49 14
TCE 7J ND
PCE 75 27
XY 43 ND
EB 240 22
CP-07
SBS SBD
TCE 22,000J 11
1,1,1-TCA 140,000J 16
PCE 290,000J 10J
XY 2,200J ND
EB 900J ND
CP-08
SBS SBD
ACETONE 18J 36J
1,1,1-TCA 43 24
PCE 12 ND
TCE 3J ND
MW-2
MW-4
MW-3
MW-10
HP-01
HP-02
HP-03
HP-04
HP-05
HP-06
HP-07
HP-09
HP-10
HP-11
HP-13
HP-14
HP-15
CP-02
CP-11
CP-12
CP-15
BG-08
WW-01
WW-02
WW-03
WW-04
WS-01
WS-02
N
0 60'
SCALE
LEGEND
EXISTING MONITORING WELL
PHASE I SAMPLING LOCATION
PHASE II SAMPLING LOCATION
W SHALLOW GROUNDWATER SAMPLE LOCATION
W(2) SHALLOW & DEEP GROUNDWATER SAMPLE LOCATION
XY = XYLENE
EB = ETHYL BENZENE
MC = METHYLENE CHLORIDE
TCA = TRICHLOROETHANE
TCE = TRICHLOROETHENE
PCE = TETRACHLOROETHENE
ND = NON-DETECT
J = INDICATES ESTIMATED VALUE
VOC CONCENTRATION IN ug/kg (ppb)
INDICATES APPROXIMATE AREA WHERE VOCS EXIST
RON-06/26/96-10:56-L:\CAD93\200\25793
WESTON MANAGERS DESIGNERS/CONSULTANTS
Three Hawthorn Parkway
Vernon Hills, Illinois
60061
EXTENT OF VOCS IN SOIL
RFI INVESTIGATION
TECHALLOY COMPANY, INC.
Union, Illinois
FIGURE 2-4



WESTON MANAGERS DESIGNERS/CONSULTANTS
Three Hawthorn Parkway
Vernon Hills, Illinois
60061

EXTENT OF METALS IN SOIL
RFI INVESTIGATION

TECHALLOY COMPANY, INC.
Union, Illinois

FIGURE 2-5

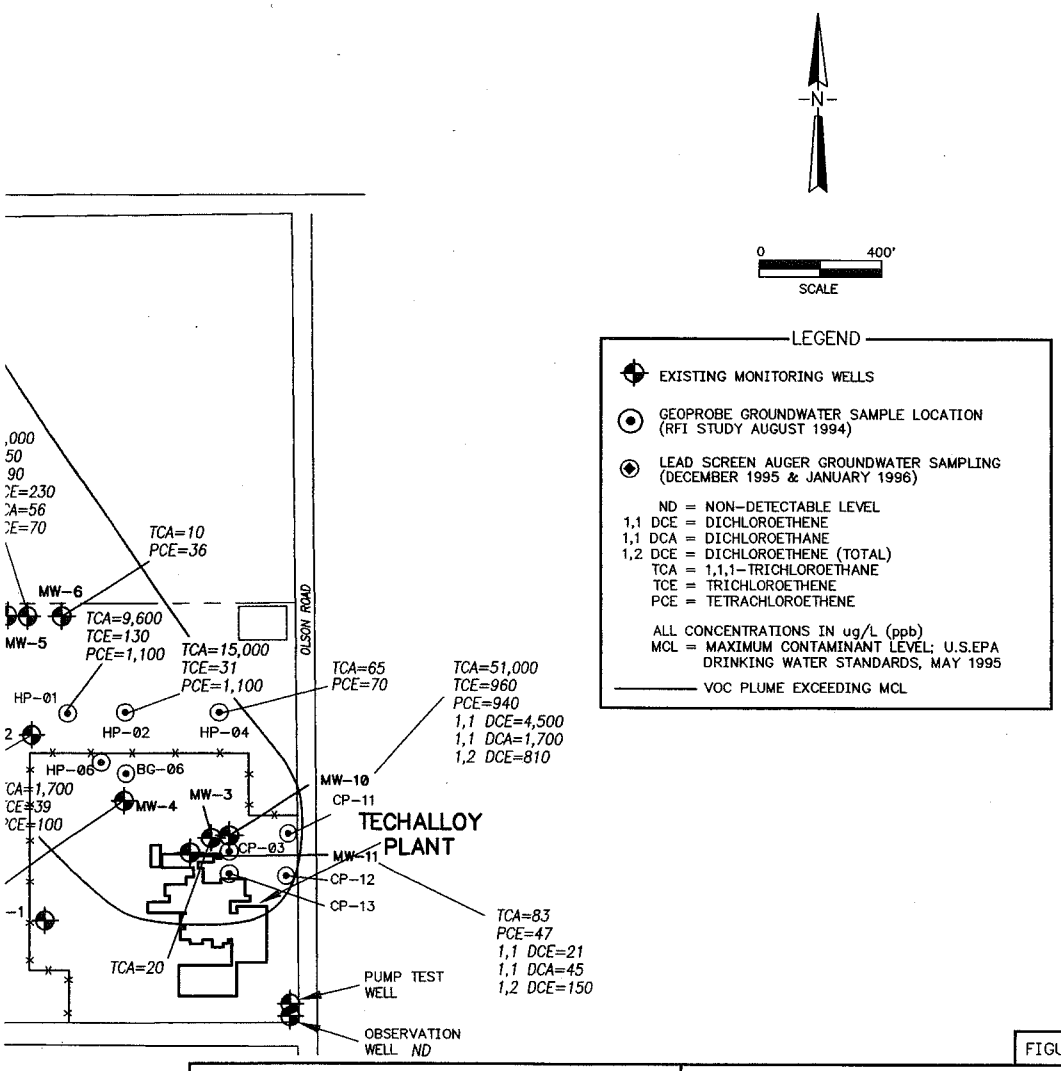


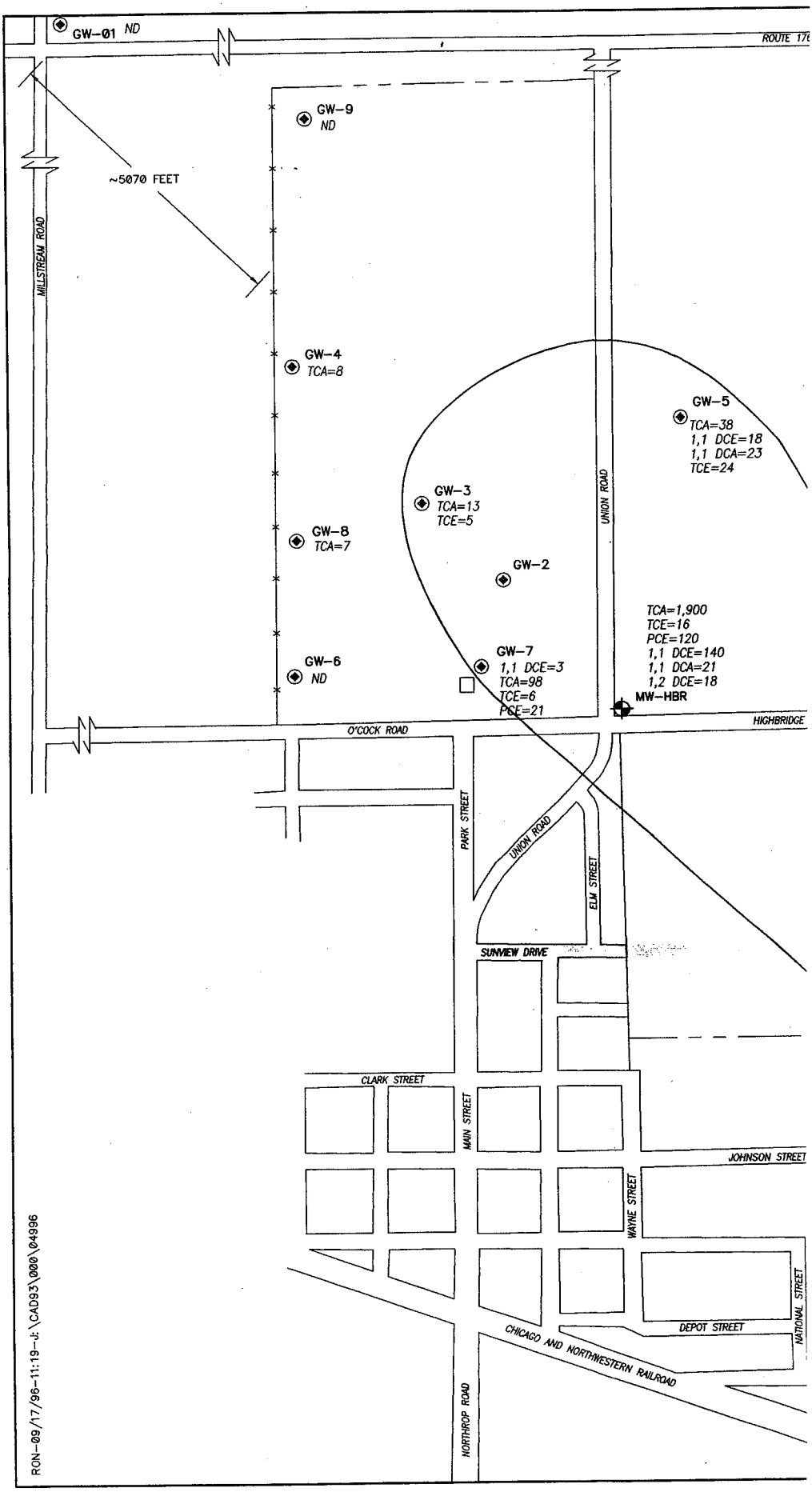
FIGURE 2-6

WESTON MANAGERS DESIGNERS/CONSULTANTS

Three Hawthorn Parkway
Vernon Hills, Illinois
60061

VOCs IN SHALLOW GROUNDWATER SAMPLES

TECHALLOY COMPANY, INC.
Union, Illinois


GW-01 ND
ROUTE 17
GW-9
ND
~5070 FEET
MILLSTREAM ROAD
GW-4
TCA=8
GW-5
TCA=38
1,1 DCE=18
1,1 DCA=23
TCE=24
GW-3
TCA=13
TCE=5
UNION ROAD
GW-8
TCA=7
GW-2
TCA=1,900
TCE=16
PCE=120
1,1 DCE=140
1,1 DCA=21
1,2 DCE=18
MW-HBR
GW-7
1,1 DCE=3
TCA=98
TCE=6
PCE=21
GW-6
ND
HIGHBRIDGE
O'COCK ROAD
PARK STREET
UNION ROAD
ELM STREET
SUNVIEW DRIVE
CLARK STREET
MAIN STREET
JOHNSON STREET
WAYNE STREET
NATIONAL STREET
DEPOT STREET
CHICAGO AND NORTHWESTERN RAILROAD
NORTHROP ROAD
RON-09/17/96-11:19--L:\CAD93\000\04996

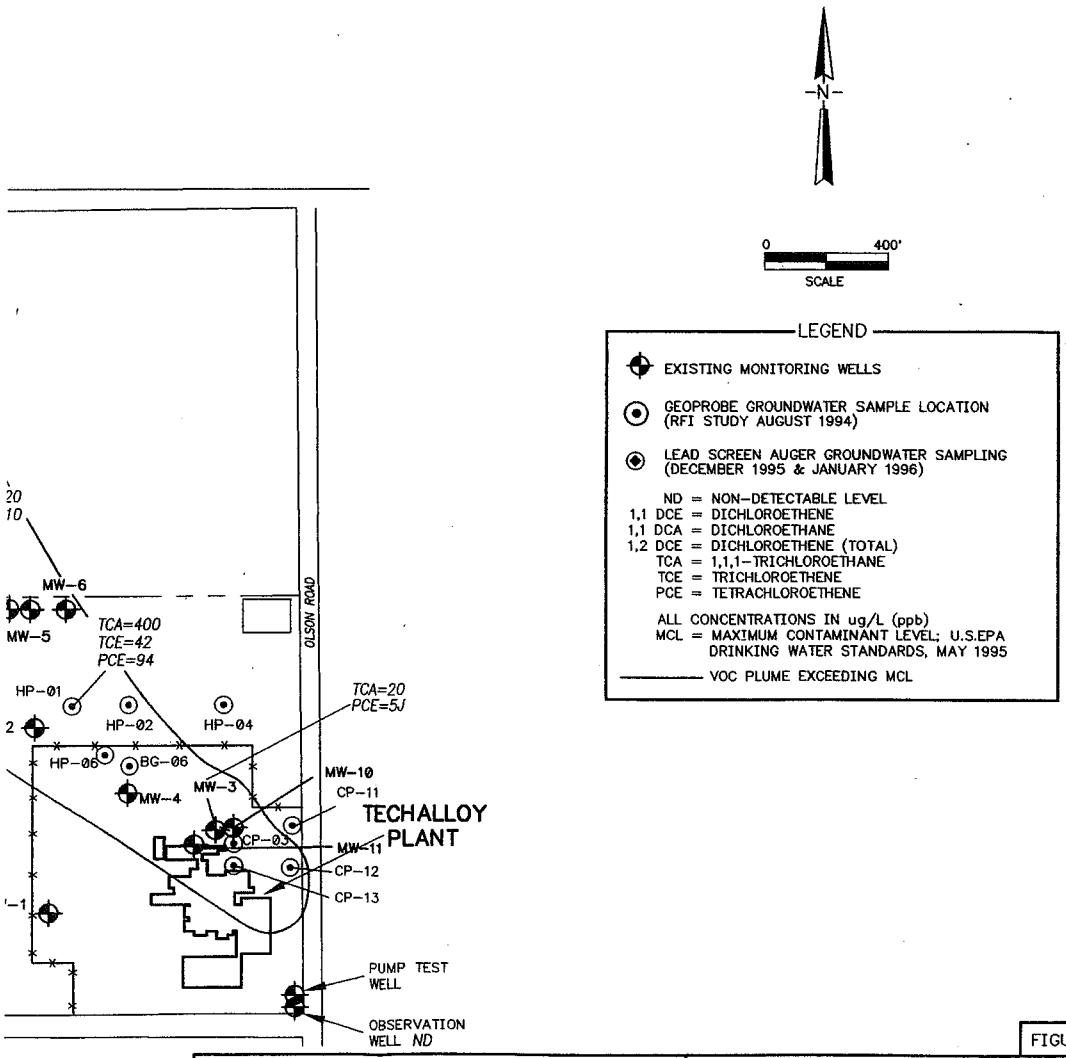


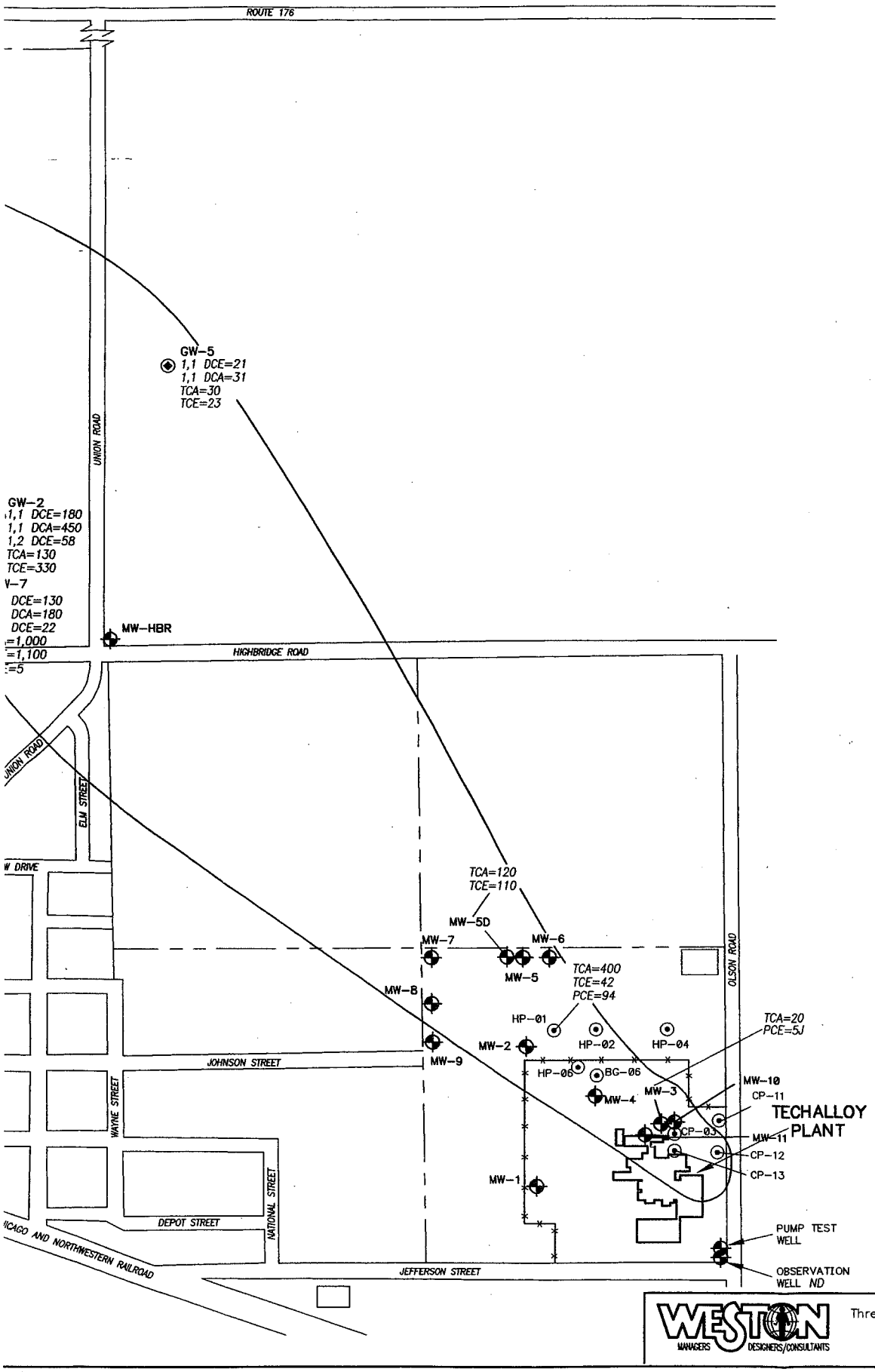
FIGURE 2-7

WESTON MANAGERS DESIGNERS/CONSULTANTS

Three Hawthorn Parkway
Vernon Hills, Illinois
60061

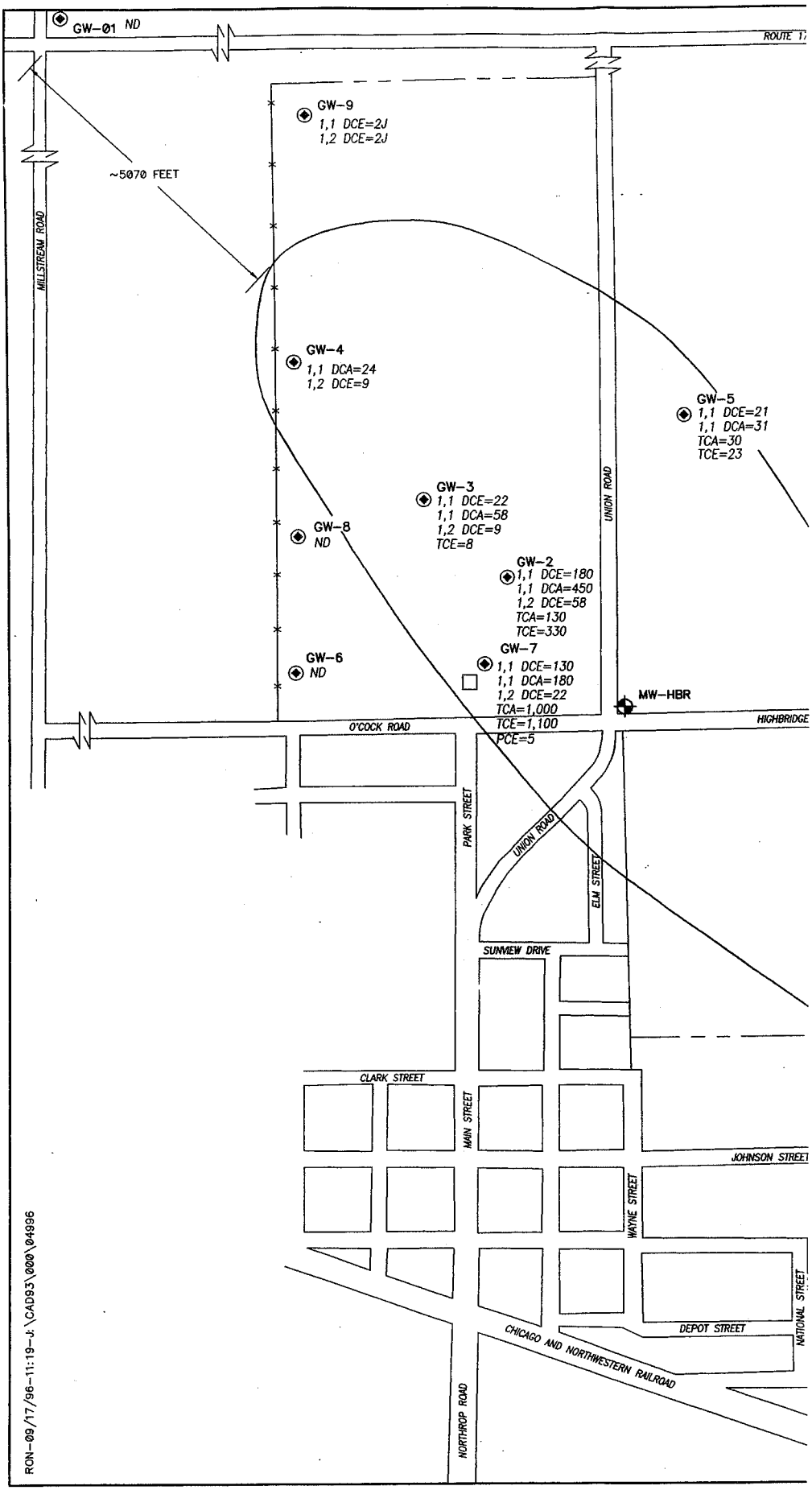
VOCs IN DEEP GROUNDWATER SAMPLES

TECHALLOY COMPANY, INC.
Union, Illinois



WESTON MANAGERS DESIGNERS/CONSULTANTS

Three Hawthorn Park
Vernon Hills, Illi
6(


GW-01 ND
ROUTE 17
GW-9
1,1 DCE=2J
1,2 DCE=2J
~5070 FEET
MILLSTREAM ROAD
GW-4
1,1 DCA=24
1,2 DCE=9
GW-5
1,1 DCE=21
1,1 DCA=31
TCA=30
TCE=23
GW-3
1,1 DCE=22
1,1 DCA=58
1,2 DCE=9
TCE=8
UNION ROAD
GW-8
ND
GW-2
1,1 DCE=180
1,1 DCA=450
1,2 DCE=58
TCA=130
TCE=330
GW-7
1,1 DCE=130
1,1 DCA=180
1,2 DCE=22
TCA=1,000
TCE=1,100
PCE=5
GW-6
ND
MW-HBR
HIGHBRIDGE
O'COCK ROAD
PARK STREET
UNION ROAD
ELM STREET
SUNVIEW DRIVE
CLARK STREET
MAIN STREET
JOHNSON STREET
WAYNE STREET
NATIONAL STREET
DEPOT STREET
CHICAGO AND NORTHWESTERN RAILROAD
NORTHROP ROAD
RON-09/17/96-11:19-J:\CAD93\000\04996

2.3 INTERIM MEASURES

To prevent the continued off-site migration of the VOC plume during the CMS, the following IMs were implemented:

- A groundwater extraction system to prevent further migration of impacted groundwater.
- A treatment system for treating extracted groundwater to acceptable levels to meet discharge requirements.
- A groundwater monitoring network.
- Continued operation and maintenance of the groundwater extraction and treatment system.

SECTION 3
CMS SCOPE

In accordance with Attachment II of the AOC and the CAP, the CMS will consist of these four major tasks:

- Identification and development of the corrective measure alternative(s).
- Evaluation of the corrective measure alternative(s).
- Justification and recommendation of the corrective measure(s).
- Preparation of reports.

The objectives of these four tasks are discussed in the following paragraphs.

3.1 TASK 1—IDENTIFICATION AND DEVELOPMENT OF THE CORRECTIVE MEASURE ALTERNATIVE(S)

Corrective measure alternatives will be identified and developed according to the following four subtasks:

- Description of current conditions.
- Establishment of corrective action objectives.
- Screening of Corrective Measure Technologies.
- Identification of the corrective measure alternative(s).

Description of Current Conditions

This subtask would be conducted in accordance with Attachment II of the AOC and the CAP. The description of current conditions would include an update of the information

regarding the nature and extent of contamination of the site, if necessary. This description would include an explanation of the interim measures, as well as a facility-specific statement of the purpose for the response.

The CMS will subsequently develop site-specific objectives for the corrective action needed to protect human health and the environment. These objectives will take into account public health and environmental criteria, in accordance with Attachment II of the AOC and the CAP.

Establishment of Corrective Action Objectives

The corrective action objectives will be based on information gathered during previous investigations and will be established to protect human health and the environment. Corrective action objectives will focus on soil and groundwater contamination that was identified at the Techalloy facility. The corrective action objectives for the Techalloy facility will:

- Prevent hazardous constituents from exceeding their respective target cleanup levels at the compliance point by providing complete capture of the groundwater plume and by subsequently removing the hazardous constituents and/or treating them in place.
- Prevent on-site ingestion or direct contact with water containing hazardous constituents at concentrations exceeding target cleanup levels.
- Prevent on-site ingestion or direct contact with soil containing hazardous constituents at concentrations in excess of target cleanup levels.
- Prevent migration of hazardous constituents from soil into groundwater, resulting in groundwater concentrations exceeding target cleanup levels.

The following paragraphs describe how the target cleanup levels will be developed for soil and groundwater at the Techalloy facility.

Soil

A target cleanup level will be developed for each constituent detected in soil during the RFI. Target cleanup levels will be developed in accordance with the proposed Subpart S rule (55 FR 30798) and the final CAP. Direct contact (i.e., ingestion and inhalation) and leaching to groundwater will be considered in the selection of target cleanup levels. The target cleanup levels for soil will be determined based on the following criteria:

- U.S. EPA Established Soil Cleanup Levels: The U.S. EPA has promulgated soil cleanup levels for very few chemicals (e.g., polychlorinated biphenyls [PCBs]). Where available, U.S. EPA-established cleanup levels will be selected as soil target cleanup levels for the Techalloy facility.

- Human Health Risk-Based Concentration: Risk-based screening concentrations have been developed by the IEPA and the U.S. EPA for numerous constituents. Risk-based concentrations are chemical concentrations that correspond to a fixed level of risk (i.e., a hazard quotient of 1 for noncarcinogens or a lifetime cancer risk between 1×10^{-4} and 1×10^{-6}) for standard exposure scenarios (i.e., residential and industrial). Risk-based concentrations have been developed for three exposure pathways: ingestion, inhalation, and migration to groundwater. Target cleanup levels will be developed from these risk-based screening concentrations. Risk-based concentrations will be obtained from the following sources:

  - IEPA *Tiered Approach to Cleanup Objectives Guidance Document* (IEPA, 1996).

  - U.S. EPA Region III Risk-Based Concentrations Table (Smith, 1996).

  - U.S. EPA Soil Screening Levels (U.S. EPA, 1995).

The most probable future use of the site is industrial. As stated in Section V.B of 55 FR 30798:

> "Contaminated soil would be remediated to levels consistent with plausible future patterns of land use. For example, where access to an area would be unrestricted, cleanup would generally be required to levels appropriate for residential development. At industrial sites or sites dedicated to long-term hazardous waste management, cleanup to less stringent levels might be appropriate, although institutional controls could be necessary to ensure that the use pattern did not change."

Therefore, the establishment of cleanup goals for soil based on future residential land use is not appropriate at the Techalloy facility. Rather, the establishment of cleanup goals based on current and future site worker exposure scenarios is appropriate. A target risk level of 1×10^{-4} is proposed for the development of target cleanup levels for on-site soil. This target risk level is proposed because of the continued industrial use of the property and because the areal extent of contamination is not site-wide and is instead limited to each SWMU.

The lowest risk-based concentration for the three exposure pathways (ingestion, inhalation, and migration to groundwater) will be used as the basis for developing the target cleanup level. On-site groundwater target cleanup levels will be used as the basis for determining soil target cleanup levels for migration to groundwater.

For inorganics, background levels will be selected as the target cleanup levels if background concentrations are higher than the risk-based target cleanup levels.

Groundwater

Based on the constituents that were detected in on-site and off-site groundwater during the RFI, a target cleanup level will be developed for each constituent. Target cleanup levels will be developed in accordance with the proposed Subpart S rule (55 FR 30798) and the final CAP. The target levels for groundwater will be determined based on the following criteria:

- Maximum Contaminant Level (MCL): A primary MCL is the maximum permissible level of a chemical in water that is delivered to any user of a public water system. If there is no MCL for a constituent, the target cleanup level will be based on a human health risk-based concentration.

- Human Health Risk-Based Concentration: Risk-based screening concentrations have been developed by the IEPA and the U.S. EPA for numerous constituents. Risk-based concentrations are chemical concentrations that correspond to a fixed level of risk (i.e., a hazard quotient of 1 for noncarcinogens or a lifetime cancer risk between 1×10^{-4} and 1×10^{-6}) for standard exposure scenarios (i.e, residential and industrial). Target cleanup levels will be developed from these risk-based screening concentrations. Risk-based concentrations will be obtained from the following sources:

  - IEPA *Tiered Approach to Cleanup Objectives Guidance Document* (IEPA, 1996).

  - U.S. EPA Region III Risk-Based Concentrations Table (Smith, 1996).

In determining groundwater cleanup levels, groundwater at the Techalloy facility will be classified (IEPA, 1996). Establishment of risk-based cleanup goals for on-site groundwater based on future residential land use is not appropriate at the Techalloy facility. As previously discussed, the most probable future use of the site would be industrial. Therefore, the establishment of cleanup goals based on current and future site worker exposure scenarios is appropriate. A target risk level of 1×10^{-4} is proposed for the

development of target cleanup levels for on-site groundwater. This target risk level is proposed because of the continued industrial use of the property and because the shallow unconsolidated glacial drift aquifer system within the Techalloy property is not used as a potable supply. A target risk level of 1×10^{-6} and residential land use are proposed for development of target cleanup levels for off-site groundwater.

Screening of Corrective Measure Technologies

Once corrective action objectives have been determined, a reassessment of the technologies specified in the RFI work plan (WESTON, 1994) would be conducted to identify any additional technologies that are applicable to the facility. This revised list of technologies would be screened to eliminate those that may not prove feasible to implement, that rely on technologies unlikely to perform satisfactorily or reliably, or that do not achieve the corrective measure objectives within a reasonable time period. Site, waste, and technology limitations will be considered to eliminate technologies.

Identification of the Corrective Measure Alternatives

The corrective measure technologies that survive the screening will be assembled into media-specific corrective measure alternative(s), in accordance with Attachment II of the AOC and the CAP.

3.2 TASK 2—EVALUATION OF THE CORRECTIVE MEASURE ALTERNATIVE(S)

The CMS will evaluate the corrective measure alternative(s) developed under Task 1. The AOC requires the evaluation to be based on technical, environmental, and human health and institutional concerns, as well as on cost. However, the CAP requires the potential remedy to meet the following four corrective action standards.

- Protect human health and the environment.
- Attain media cleanup standards.
- Control the source of releases.
- Comply with any applicable standards for management of wastes.

In addition, the CAP outlines five general factors that should be considered when selecting a remedy that meets the four standards listed above. The five selection decision factors listed below include the information required by the AOC and additional factors that should be considered when selecting the appropriate corrective measure.

- Long-term reliability and effectiveness.
  - Magnitude of residual risk.
  - Adequacy and reliability of controls.
- Reduction of toxicity, mobility, or volume of wastes.
  - Treatment process used and materials treated.
  - Amount of hazardous materials destroyed or treated.
  - Degrees of expected reductions in toxicity, mobility, or volume.
  - Degree to which treatment is irreversible.
  - Type and quantity of residuals remaining after treatment.
- Short-term effectiveness.
  - Protection of community during remedial actions.
  - Protection of workers during remedial actions.
  - Environmental impacts.
  - Time until remedial action objectives are achieved.
- Implementability.
  - Ability to construct and operate the technology.
  - Reliability of the technology.
  - Ease of undertaking additional corrective measures, if necessary.
  - Ability to monitor effectiveness of remedy.
  - Coordination with other agencies.

- Availability of off-site treatment, storage, and disposal services and specialists.
- Availability of prospective technologies.

- Cost.
  - Capital costs.
  - Operating and maintenance cost.
  - Present worth costs.

The four general standards and the five selection decision factors shown above encompass the items required by the five criteria identified in the AOC. As required by proposed 40 CFR 264.525(a) (55 FR 30798), the selected corrective measure, at a minimum, must meet the four general standards identified above. The five selection decision factors shall also be considered in evaluating corrective measure alternatives and in identifying key trade-offs between the alternatives that meet the four general standards, as required by proposed 40 CFR 264.525(b) (55 FR 30798). In addition, the five selection decision factors would include the evaluations and assessments required by proposed 40 CFR 264.522(a). This approach is consistent with the *Guidance on RCRA Corrective Action Decision Documents —The Statement of Basis Final Decision and Response to Comments, SB Guidance,* (U.S. EPA, 1991). The primary purpose of the Statement of Basis (SB) Guidance is to provide the U.S. EPA with a standardized format for preparing an SB or a Response to Comments (RTC) when a corrective action is implemented through either a permit or an enforcement order. The SB Guidance recognizes the use of the five criteria when selecting a remedy for the site. Thus, the approach presented in this work plan is consistent with current U.S. EPA guidance.

The CMS will document how the corrective measure alternatives meet the four standards and will provide information concerning the evaluation of the corrective measure alternatives with respect to the five decision factors.

3.3 TASK 3—JUSTIFICATION AND RECOMMENDATION OF THE CORRECTIVE MEASURE OR MEASURES

Under Task 3, Techalloy will justify and recommend media-specific corrective measure alternatives. The justification will be based on the four standards and the five selection decision factors. Summary tables will also identify key trade-offs among selection decision factors.

3.4 TASK 4—PREPARATION OF REPORTS

Techalloy will submit monthly progress reports, as well as draft and final CMS reports. These reports will include those requirements outlined in both Attachment II of the AOC and the CAP Guidance.

SECTION 4
CMS SCHEDULE

The following schedule will be in effect during the CMS for submittal of various documents:

Document	Submittal Date
Draft CMS work plan	30 days after submittal of the final RFI report.
Final CMS work plan	30 days after U.S. EPA comment on the draft CMS work plan.
Draft CMS report	60 days after U.S. EPA approval of the final CMS work plan.
Final CMS report	45 days after public and U.S. EPA comment on the draft CMS report.
Progress reports	Monthly.

This schedule is consistent with Attachment II of the AOC, except that a schedule is included for the final CMS work plan, and the schedule for submittal of the draft CMS report is dependent on the approval of the final CMS work plan.

SECTION 5
REFERENCES

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